DOCUMENT RESUME

ED 355 661 EA 024 786

AUTHOR	Corvalan, Oscar V.
TITLE	Information for Decision-Making in Education. Report on New Forms of Ibero-American Cooperation Based on the Conference (Extremadura, Spain, October 1989).
INSTITUTION	Centre for the Study of Education in Developing Countries, The Hague (Netherlands).
REPORT NO	CESO-R-6
PUB DATE	Oct 91
NOTE	111p.; Two pages contain copier streaks that blur a small portion of type.
PUB TYPE	Reports - Research/Technical (143) -- Collected Works - Conference Proceedings (021)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Cultural Differences; *Decision Making; Educational Development; *Educational Policy; Elementary Secondary Education; Foreign Countries; Higher Education; *Information Utilization; Politics; Sciences; *Scientific Research
IDENTIFIERS	*Latin America; Portugal; Spain

ABSTRACT

Problems exist in the use and application of information from scientific research in decision-making processes in education. On a macrosocial level, a theme is present in the use of information in decision making that is applicable to relationships between science and politics. This theme is strongly influenced by the prevailing national culture and social norms of a society. Given this, an ethos can be distinguished in decision making between the Saxon and Iberian cultures. These beliefs contain certain power structures assigned to each social group, and they also outline how power is demonstrated. On a microsocial level, information is used by consumers or families to make decisions concerning certain products or services, including education. Information also affects the conduct of people who transmit knowledge, from the student-teacher relationship to an entire school system. Chapters address the following topics: the context of dialogue among producers, disseminators, and users of information in education; the Latin American Network of Information and Documentation in Education as a regional network and as a database system; panorama of Latin American research; the use of information on education policy formulation; computerization of education databases and the European/Ibero-American interconnection; and initiatives in Ibero-American cooperation. Three appendices are included. (JPT)

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CESO

Report | no.6

Information for decision-making in education

Report on new forms of Ibero-American cooperation based on the conference held in Extremadura, Spain in October 1989

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CIP-GEGEVENS KONINKLIJKE BIBLIOTHEEK, DEN HAAG

Corvalán V., Oscar

Information for decision-making in education: report on new forms of Ibero-American cooperation based on the conference held in Extremadura, Spain in October 1989 / Oscar Corvalán V. : transl. by Jan Griffiths. - The Hague: CESO - (CESO) reports.ISSN 0922-9809; no. 6)
ISBN 90-6443-060-8
Trefw.: onderwijsbeleid; Latijns-Amerika.

Oscar Corvalán V.

CESO Report | no.6

Information for decision-making in education

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Centre for the study of education in developing countries

The Hague, October 1991

INFORMATION FOR DECISION-MAKING

IN EDUCATION

Report on New Forms of Ibero-American Cooperation Based on the Conference Held in Extremadura, Spain in October 1989.

Oscar Corvalán V.

Latin American Network of Information and Documentation in Education ("Red Latinoamericana de Información y Documentación en Educación" -REDUC-)

Centre for the Investigation and Development of Education ("Centro de Investigación y Desarrollo de la Educación" CIDE)

Santiago-Chile, January 1991.

(Translated by: Jan Griffiths)

INTRODUCTION

This report addresses the problem of the use and application of information provided by scientific research, in the decision-making processes related to education, on both a macro and micro-social level. Given the processes of internationalization of information, this theme is examined with respect to the possibilities for organizing the transmitting of educational information within Ibero-American countries, and between them and Europe, and other continents.

On a macro-social level, the use of information for high-level decision-making constitutes a theme that can be applied generally in relationships between the scientific and the political spheres. Those processes, which give rise to relationships between the two fields, are strongly marked by national culture and the social norms prevailing in each society. It is in this way that it is possible to distinguish an ethos in decision-making between the Saxon and Iberian cultures, in which certain quotas of power assigned to each social group, and the procedures through which that power is demonstrated, are projected.

On a micro-social level, information is used (whether by consumers or family units) in order to decide what behaviour is to be assumed when confronted with certain products or services, including education. In this latter area, information also becomes an important element in the conduct of the units themselves dedicated to the transmitting of knowledge, from the student-teacher relationship to the coordinated functioning of the school system.

The theme of use of information in education was dealt with at an international conference held in October of 1989 in Badajoz, Province of Extremadura, Spain, under the auspices of the Latin American Network of Information and Documentation in Education (REDUC) and the following Spanish organizations: "Sociedad Estatal V Centenario", CIDE of the Ministry of Science and Education, the Organization of Ibero-American Education, "Extremadura Enclave 92", and ICE of the University of Extremadura.

The urgency in dealing with this theme is due to the decline in the quality of public education in Latin American countries, one of the consequences of the budgetary restrictions imposed by payment of the foreign debt in this region.

In order to situate the problem of use and application of scientific information in educational decision-making, the first chapter of this report begins by briefly examining the principal problems in Latin American education. At the same time, the first chapter presents the origins and development of the previously-mentioned Ibero-American meeting, emphasizing the importance -at a national level- of inter

and intra-regional exchanges among producers, disseminators and users of information in education.

Chapter Two is dedicated to a summary of the development experience of the network "REDUC" and its stages in consolidating itself regionally. REDUC has demonstrated a certain tradition in its use of educational information, has promoted social recognition of educational research and has facilitated interaction among producers, processors and consumers of information. REDUC has also played an important role in the recovery of knowledge that would be lost without their cooperation, and has set the basis for developing a certain tradition in the recovery and use of scientific knowledge in education. Currently REDUC faces the challenge of placing this information at the disposal of various categories of decision-makers; as well as the technical-organizational challenge implied in functioning as a data base and as an information network. In other words, it means re-defining its conditions of operation and production, placing emphasis on the use of the information accumulated.

Chapter Three offers a panorama of educational research in Latin America that includes, on the one hand, the principal themes researched to date and their methodological focus; and on the other hand, one can observe the gaps in existing knowledge, the limitations in institutional development of support for research efforts, and the need for data base support for the research. Coming out of the discussion of this problem, one recognizes the emergence of an interpretive framework of the educational reality from a Latin American perspective. That reality differs from reports on the state of the art of education in industrialized countries, and the policy recommendations that it is possible to deduce from those. REDUC's role in relation to research has been more one of bringing together researchers, teachers and decision-makers in order to be aware of the gaps and of each other's openness to the knowledge acquired, than it has been of financing research. Educational research at the present time suffers from a change in emphasis, from concerns about coverage towards a concern about the quality of the school system. For its part, REDUC has made an effort to disseminate the problems around and responses to education, slowly moving from the accumulation/dissemination duo towards the use/application duo of information on the part of qualified decision-makers, be they teachers, families, administrators or political decision-makers.

Chapter Four deals with this last problem-area and concentrates on the problem of use of information about education in the formulation of policies. The complexity of the processes of mediation between the production of knowledge on the part of researchers, and its application on the part of policy decision-makers, is fully recognized. It is also recognized that the Latin American research tradition does not emphasize the production of reports with policy recommendations evaluated in light of the available information. It is within this context that we see REDUC's efforts to mediate between production and use of educational information. In that area it has elaborated a series of states of knowledge on various educational themes, together with promoting the creation of national user networks.

While it is true that until now REDUC's products have been of a more academic nature, it must be recognized that this is a first step in orienting and facilitating the systematization of the information available. Together with recognizing that the application of accumulated knowledge to educational policies and programs means modifying many factors (among which we would point out the attitudinal change of the social actors presented with the use of information), one should also recognize that this is a slow process. After having created consciousness around the problems of Latin American education, it is now necessary to develop actions towards achieving a communication of the accumulated knowledge that will bring efficiency to educational action.

Chapter Five examines the principal problems linked to the computerization of data bases on educational research, based on the Latin American and European experiences. The incorporation of informatics as a tool providing potential to communication, also allows for new possibilities for interaction among social actors interested in education, independent of the physical distance. Informatics' applications not only present the possibility of increasing the internal productivity of the information system, but also allows for a drastic increase in the volume and types of users, especially by facilitating conversations among the actors in the education and decision-making processes.

This report includes a final chapter containing some of the conclusions and recommendations of the above-mentioned Conference, emplasizing the initiatives in Ibero-American cooperation produced during the meeting; and highlighting a discussion around possibilities for educational conversations between Latin America and other regions. The recommendations put forward here project the future action of REDUC, as much in Latin America as in Europe and other regions. The importance of arriving at operative agreements that allow for a fluid transmitting of data between the regions is emphasized; as well as the need for intra-regional communication that allows for a re-thinking of local and national educational development, in dialogue with peer groups in other regions.

Finally, we have incorporated a series of appendices that will be useful to the reader interested in more detail about the Conference, or in establishing a more fluid relationship with its participants.

ACKNOWLEDGEMENTS

The author thanks those who made possible the Conference in Badajoz, and extends particular appreciation to the following people who collaborated by making valuable comments on the original manuscript:

Luis Brahm
Patricio Cariola
Juan Eduardo García-Huidobro
Jan Griffiths
Rolando Maggi
Ernesto Schiefelbein
Alejandro Tiana
Horacio Walker

SANTIAGO (Chile), January 1991.

ACRONYMS REFERRING TO INSTITUTIONS CITED IN THE TEXT:

CEBIAE : Bolivian Centre for Education Research and Action
CEDIE : Centre for Education Research
CEE : Centre for Education Studies
CEMIE : Multi-National Centre for Education Research
CEPAL : Economic Commission for Latin America
CERPE : Centre for Reflection and Planning in Education
CESO : Centre for the Study of Education in Developing Countries
CID : Information and Documentation Centre
CIDA : Canadian International Development Agency
CIDE : (Chile) Centre for the Investigation and Development of Education
CIDE : (Spain) Centre for Education Research and Documentation
CIEP : Centre for Research and Educational Experimentation
CINDEG : Centre for Education Research and Documentation
CIPCA : Centre for Research and Peasant Promotion
CIPES : Centre for Educational and Social Research and Promotion
CIRE : Centre for Educational Information and Resources
CIUP : Research Centre of the University of Education Sciences
CLACSO : Latin American Council of Social Sciences
CPES : Centre for Sociological Studies
CREFAL : Regional Centre for Adult Education and Functional Literacy
CRESALC : Regional Centre for Higher Education in Latin America and the Caribbean
ERIC : Educational Resources Information Centre
ERNESA : East African Education Research Network
GTZ : German Agency for Technical Cooperation
ICASE : Central American Institute of Administration and Supervision of Education
ICE : Education Sciences Institute
IDRC : International Development Research Centre
INEP : National Institute for Education Research
INIDE : National Institute for Research and Development in Education
INN : Inter-American Institute of the Child
OEI : Ibero-American Education Organization
OISE : Ontario Institute for Studies in Education
OREALC : Regional Office of Education for Latin America and the Caribbean
PICPEMCE : National Network for Formation, Upgrading and Training of Educators
REDALF : Regional Network for Staff Training and Specific Support in Literacy Programs and Adult Education
REDINET : State Network of Education Research Data Bases
REDPLAD : Regional Network for Training, Innovation and Research in Primary Education Planning and Administration and Literacy Programs
RRAG : Research Review and Advisory Group
SEAMEO : Southeast Asian Ministers of Education Organization
SEARRAG : Southeast Asian Research Review and Advisory Group
WGOO : Working Group on Education in Developing Countries

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Chapter I

THE CONTEXT OF DIALOGUE AMONG PRODUCERS, DISSEMINATORS AND USERS OF INFORMATION IN EDUCATION

1.1. The Latin American Socio-Political Context

In order to situate the problem of application and use of scientific information in educational decision-making, the first chapter of this report begins by briefly examining the current socio-political context in Latin America and the principal problems in education in the region. At the same time, in order to "contextualize" the content of the report, this first chapter presents the origins and development of the previously-mentioned Ibero-American meeting, emphasizing the importance of inter and intra-regional exchanges among producers, disseminators and users of information in education.

The Conference took place within both an academic and a cordial atmosphere, marked by a series of elements that served as pillars in the dialogue and building of projects for North-South and South-North collaboration.

At almost 500 years since the first encounter between the Iberian and American civilizations, Latin America finds itself overwhelmed by what has been classified as its greatest crisis in contemporary history. From an importer of capital in prior decades, the region is once again an exporter; and, since 1982, these countries have been obliged to follow the recommendations of the International Monetary Fund (IMF) in the area of structural adjustments, giving rise to high unemployment levels, inflation and economic recession. The development model based on an industry protected and turned towards an internal market, which was the practise for almost a half-century, appears now to be definitively liquidated.

During the last ten (10) years, Latin American countries have experienced a severe economic recession, aggravated by the weight of the foreign debt. The economic depression of the 1980's has severely deteriorated the progress made in prior decades, has provoked a considerable degree of deterioration in

the environment, and has meant a significant decrease in the standard of living of the vast majority.

In social terms, along with the domination of new neoliberal policies, one observes a process of exclusion or marginalization of classes, strata and social groups that -in one way or another-had managed to incorporate themselves into "modern times" or were on the way to doing so. This situation (aside from constituting a practical reverse in the policies of social integration that accompanied the model of internal industrialization) constitutes the objective basis for the state of social disintegration that has been observed; together with the violence linked to authoritarian governments in the countries of this region, political corruption, narcotics trafficking and over-crowding.

In spite of the fact that the most visible causes and effects of the crisis appear in the politics-economic spheres, this also has a socio-cultural dimension not always sufficiently examined. This cultural dimension of the crisis in part manifests itself in the difficulty that Latin American intellectuals have in thinking about and disseminating new interpretive frameworks that could open up new possibilities for confronting the crisis, and moving towards the future with adequate responses to the magnitude of the problems faced.

Perhaps the time has come to discover new continents of knowledge, and re-think existing alternatives as a challenge that would make possible the move towards the solution of immediate and mid-term problems, thus seeking to open up new meaning and understanding of the Latin American reality. This is directly related to education in countries where, in spite of the crisis, they continue to explore new roads, though often lacking in sufficient research and autonomous thought.

Finally, in order to emerge from the current crisis, it is possible that Latin American countries will require a renewed cooperative effort at both the national and regional / inter-regional levels. The strengthening of local, national and regional organisms in these countries will also require new forms of communication, access to and use of the information available both within and out side the region.

1.2. The Current Educational Period in Latin America

In the educational field, there is currently a decline -observed via research- in the level of quality of public education in Latin American countries, as one of the consequences of the budgetary restrictions imposed by the handling of payment of the foreign debt in the nations of this region.

In education, the crisis has been felt in varying ways. The first is the reduction in public expenditures in education, as part of the application of structural adjustment programs. This reduction immediately affects some key aspects in the quality of education, such as teachers' salaries at all levels, technical-pedagogical resources and school infrastructure. But it also affects other less visible aspects, such as

educational research, even though they have a strategic importance in educational development.

According to UNESCO "the magnitude of the economic crisis is even greater in the case of education due to the reduction in the percentage of the GNP assigned to that sector... CEPAL estimated that in 1987 the GNP per capita was less than in 1980 in 15 of the 19 Latin American countries, and in three (3) of the four (4) Anglophone Caribbean nations... As well, the percentage of the GNP destined for education in 1987 was less than in 1980 in the 18 countries with a reduced GNP... In Latin America and the Caribbean, public spending in education decreased from $ 88.00 to $ 60.00 U.S. per inhabitant, from 1980 to 1986... This is reflected in a decrease in the percentage of the GNP directed at education (from 3.9 in 1980 to 3.6 in 1986) (1)". This same report points out that the scarcity of resources has stimulated an interest in improving the administration and efficiency of the educational systems, be that via better information or decentralization of the educational process; even though it recognizes that there still exists some confusion around the contribution of the latter towards greater efficiency.

With respect to research, some work carried out by teams in REDUC indicates that, on the one hand the number of research works has diminished in Latin America; and, on the other hand, the nature of the research and educational experiences will be changing. In relation to this latter point, a marked decrease in research projects of a pilot or experimental nature has been noted, and a certain increase in the proportion of small personal investigations, case studies, essays and other works that require fewer resources. It is also possible to affirm that the period of carrying out profound educational reforms, and the application of national educational development plans, appears to have come to an end at the commencement of the 1980's.

Given the above, broad transformations, whose effects on educational systems and societies will be felt in the mid and long-term, are being carried out in Latin America. For example, the strategies of educational decentralization that can be observed in Argentina, Brazil, Colombia, Chile and Mexico -which are countries with governments of very distinct political orientations- overflow into administrative, and sometimes financial, decentralization measures in the management of educational systems with a clearly local angle. The former brings with it "new forms for channelling resources, new models of participation in the educational process, and new procedures for channelling necessary basic information for a rational participation in the decisions that affect that process" (2).

The educational plans and reforms of the 1960's and 1970's centred their efforts on the teaching-learning process, curriculum, study plans and programs, and teaching methods. During that period, efforts at increasing access to education to socially-disadvantaged shantytown groups were notable; but only as an exception were measures taken to reform the administrative and legal-political dependence of the various

components of the educational system. The central concern of that period was how to teach more people in a more effective way. Towards the beginning of the 1980's, Latin America began to approach the aspiration of this century for universal primary education, having carried out some efforts in beginning to break with the pedagogical tradition of simply memorizing data that was the norm in the 19th Century. At the same time, they set the basis for establishing a better congruence with the development planning processes initiated at the end of the 1950's.

Traditionally, the development of public education in Latin America has been the preferred responsibility of the State, so that the processes of planning and reform of the educational systems previously pointed out have also been state/public efforts. Thanks to these, systems of educational statistics, planning units, and some post-graduate and educational research programs were generated in various countries. Those processes were carried through with professionals in the educational system itself and with some social scientists who took on concerns in the area of education.

However, when the cycle of educational reforms had just come to its conclusion, there appeared the spectre of the world economic crisis and with it a distinct way of social diagnosis marked by neo-liberal thinking. Accordingly, the major obstacles to the production of goods and services -including education- were to be found in state action, which would inhibit the creative energies of society. As a consequence of the debt crisis and the emergence of neo-liberal thought, interpretations have emerged which have substantially changed the assumptions upon which the reforms undertaken and the educational development plans elaborated in the past had been based.

The efforts at universalization of primary education, led by the State, established as socially valid the problems linked to the school-community relationship and to the social and individual relevance of education. The anti-state interpretations in vogue during the current crisis change the social significance of the objectives and management of education, and create other problems for education research. Given the major dose of economic utilitarianism in education and the prevailing high levels of unemployment, the explosive increase in highschool and university registrations constitutes a genuine social problem.

For some the decentralization of educational management constitutes an advance towards the achievement of a greater relevance of education in linking it more to the community; while for others, it constitutes a possibility for diminishing the role of the State, the weight of the negotiating power of teachers, and in general, a way of transferring the costs of education to the local communities and to families.

Currently, education in the region presents a series of deficiencies, some of which could be improved if there were greater knowledge of the determining factors and modifying mechanisms of those deficiencies.

The research agenda for understanding and modifying the current situation is immense, and the resources increasingly scarce due to the context we have just described. The effects of the crisis and of the processes of decentralization on the quality and quantity of the educational offer is a central question. A report recently prepared by UNESCO (3) points out the existence of 42.6 million illiterate persons in Latin America, of whom almost 90% are of rural or native origin and over 40 years of age.

The lack of information, among other factors, leads to the application of erroneous educational policies, and makes impossible the evaluation of measures which can be taken to resolve the problems in education in countries of this region. Confronted with this panorama, the function of REDUC is even more valuable and important inasmuch as the availability of information allows for cost-savings in the systematization of research, especially during the stages of methodological design and formulation of the current state of knowledge around the theme/problem.

The transfer of decision-making and execution of educational programs at all levels requires complete, trustworthy and opportune information for effective educational management. And that requires the carrying out of constant adjustments between local realities and national policy. "The improvement of educational information systems appears to be urgent, as much in terms of decisions about the educational system as in decisions made by students, their families or other agents within the educational system. The urgency is due to the generalized concern of conveniently making available the indicators required in action-taking that pursues the putting into practise of new measures, in the planning of alternatives for change, and in the corresponding decision-making" (4).

As for the national meetings of researchers sponsored by REDUC, these also acquire a new dimension at the current time, given that they can represent a place for setting research priorities and agendas congruent with the challenge of the problems of national education.

In summary, in the Latin American educational medium, the current crisis is revealed by a series of incoherent changes that deny the very existence of the crisis. At the same time, they reflect educational deficits and the lack of research founded upon new thinking, in accordance with the situation confronting the region. Given this situation, it is crucial to incorporate information on education as a running tool of analysis; and to compare the experience of information networks such as REDUC with similar networks in other regions that use information for decision-making.

1.3. The Conference on Information in Education

The Ibero-American Conference on Information in Education was developed under the auspices of Spanish organizations linked to the commemoration of the 500th anniversary of the first encounter

between the Spanish and American civilizations. In that way it also represented a symbolic re-encounter of knowledge around Latin American education available on the old continent and in the new world (5).

This conference had as its central objective the search for strategies to tighten collaboration between the REDUC-associated centres and its users, on the one hand; and on the other, between REDUC and those responsible for information networks and development agencies in Europe.

The conference put forward the following specific objectives:

1. To offer the participants a panorama of educational research in Ibero-America and of the diverse activities that REDUC develops for disseminating that and linking it to decision-making;

2. To offer, at the same time, a panorama of European interests and research around investigation, information and documentation related to Latin American education;

3. To examine, together with European specialists and those of other regions, the employment of magnetic means for disseminating and utilizing information on education, and for facilitating access to it; and,

4. To propose forms of collaboration between REDUC and European organizations dedicated to research, information and support of educational development in Latin America.

Beyond the relevance of carrying out the conference in the current period of Latin American development, there is the legitimization of the knowledge produced in this region, not only with respect to what has been elaborated by Europeans but also with respect to other regions of the Third World that were also represented at the conference. As well, it highlighted the importance of conceiving the use of information committed to action as a valid response for confronting the current juncture.

The inter-disciplinary and inter-regional character of the conference was marked by the active participation of representatives of: a) REDUC-associated centres; b) European networks of educational information and documentation; c) European funding agencies interested in education; d) educational researchers from Latin America, Europe, Asia and Africa; and, e) information experts.

Prior to the conference, an extra-ordinary meeting of directors of REDUC-associated centres took place in Guadalupe, Spain, with the aim of evaluating and projecting the development of the network, and whose results are incorporated into the recommendations contained in this report. The achievement of the conference objectives allowed for the discovery of that "new continent" that educational research, and its

dissemination and application, represents. On that occasion, Patricio Cariola (6) made an extensive presentation focused on the problems linked to productivity in communication and in the application of information. Hypotheses were formulated around the future of the REDUC-associated centres organizing the work with the support of the magnetic medium, conceived as organizers of conversations on scientific knowledge among actors within the educational systems.

1.4. The Bases for Dialogue During the Conference

The first session of the conference was structured around a debate on the future forms of collaboration between the European and Latin American communities. From the debate, the need to establish ongoing mechanisms that allow both Europeans and Latins to be aware of the current state of Latin American educational systems was made clear; as well as the factors that impinge upon their performance, and the policy and program options that can offer greater possibilities for improving their effectiveness and quality. It was also clear that it was not a question of defining a single or monopolist vision of knowledge, but rather of being able to mutually "retro-feed" each other with the results of scientific research on Latin American education (7).

On the other hand, the conference could not omit examining the primary material essential to decision-making in education which has been produced by scientific research. With respect to that, there were two categories of reports. The first centred around an analysis of the tendencies within educational research in Latin America. The second referred to themes related to problems of quality and coverage of public education in the countries of the region.

The analysis of the tendencies of educational research demonstrated the following elements: (a) empirical studies have diminished during the 1980's; (b) it is international organizations which are the sponsors of the greatest number of studies linked to policies and programs; (c) universities produce research of a more essay-type; (d) non-governmental organizations concentrate on the reporting of innovations and experiences in non-formal education; (e) the various Ministries of Education do not have funds assigned to the research and evaluation of their own activities.

The scarcity of resources directed at educational research brought the conference to stress the need to concentrate those resources on the qualitative improvement of the research itself, and its multiplication by means of joint investigations facilitated by educational networks such as REDUC. As well, given the existence of vast groups marginalized from education, it becomes important to concentrate efforts on the search for responses to the educational needs of such social groups.

Following an analysis of the above general panorama in research, two studies that summarize the current state of knowledge -with respect to the factors that impinge upon the quality of primary education- were

presented. These particularly focused on the factors that influence the learning levels of persons of distinct socio-economic groups. The first study referred to both internal and external factors which affect "output" in basic or primary education in Latin American countries. In general, it concluded that there currently exists sufficient accumulated knowledge to be able to implement significant changes at this level, but that the precarious financial situation of these countries impedes a putting into practise of reforms that require greater expenditure levels.

The presentation of the study on learning styles of distinct social groups -commissioned by REDUC from Dr. Teresinha Nunes-Carraher- attempted to demystify the idea that there is only one type of universal intelligence; and it emphasized the fact that this is culturally imprinted, that the school recognizes only certain types of learning, of problem resolution and of behaviour as socially valid and acceptable. The former concluded with the need for the school institution to open itself to the acceptance, recognition and use of non-formal and informal learning experiences, with the objective of capitalizing on these and promoting less elitist and more relevant styles of learning.

On the other hand, the conference also looked at research on Latin American education carried out in European countries, and established some distorting factors in these studies: among them, a certain European romanticism when viewing the reality of this region was pointed out; the lack of references to studies carried out in Latin America (due to not having access in Europe to the collections of studies available in the REDUC-associated centres); together with pointing out the need to critically examine the interchange of European models and the general under-development in education sciences, in terms of the treatment of the educational problems of socially-disadvantaged groups.

The central theme of the conference with respect to information on education was approached via the analysis of what has been the experience of existing networks of educational documentation, information and data banks, in Europe as well as Latin America; and via the knowledge of similar networks that are emerging in Asia and Africa. With respect to that, the problems arising out of the lack of inter-network communication were pointed out on the one hand (be that for the non-existence of common protocols, formats or programs, or for the lack of message-carriers within and between the regions). And on the other, the need to subsidize the dissemination of scientific research was emphasized; as well as the need to carry out joint investigations using modern means of communication, the need to establish ongoing mechanisms of coordination, and the need to conduct periodic analysis of the state of education in Latin American countries.

Finally, conference participants had the opportunity to learn about and to discuss the features of a plan of action proposed for the Conference on Education for Everyone ("Conferencia sobre Educación para Todos") to be held in March 1990 in Bangkok, under the auspices of UNICEF, UNESCO and the World

Bank. This presentation gave place to a critical examination of the proposal, and a series of clarifications around questions and doubts presented by representatives from Asia, Africa and Latin America.

In summary, the Conference on Information in Education allowed for a fruitful exchange between European and Latin American organizations and specialists, which in turn permitted a consciousness-raising around the new role which REDUC hopes to play in Latin America as a non-governmental organization. On the one hand, it is hoped that REDUC will organize and coordinate the dissemination of regional educational research; and on the other, it expects to actively participate in the generating of useful knowledge for the qualitative improvement of education, furnishing the scientific bases for acting on the various levels and within the various models of education in the region.

There was also an emphasis placed on the need for the region to become more aware of pertinens European research works around the former's educational problems and the knowledge that has been generated in Europe about Latin America; as wells as the importance of European researchers and organizations concerned about educational development becoming more aware of Latin American research. In other words, the need to establish data base exchanges between the two regions and the inter-connection of electronic networks was affirmed. In this sense, there was consensus around the special role played by Spain as an intermediary between the two.

Notes from Chapter I:

1). Schiefelbein, E. et al; La Enseñanza Básica y el Analfabetismo en América Latina y el Caribe ("Primary Education and Illiteracy in Latin America and the Caribbean"), in "Boletín Proyecto Principal de Educación en América Latina y el Caribe", N° 20. Santiago, Chile. UNESCO-OREALC. December 1989; p.19.

2). Ibid; p.23.

3). Ibid; p.17.

4). Ibid; p.49-50.

5). The Conference was officially inaugurated on October 4th, 1989 in the faculty of the Secretariat of Education of Extremadura in Mérida, Spain; with the work of the Conference commencing the following day at the Education Sciences Institute, University of Extremadura in Badajoz.

6). From: Cariola, P.: REDUC: Communication and Action; Royal Monastery of our Lady of Guadalupe, Extremadura, Spain. October 1989. CIDE-Chile.

7). In the final chapter, the reader will find a list of specific recommendations coming out of the Conference.

Chapter II

REDUC AS A REGIONAL NETWORK AND AS A DATA BASE SYSTEM(8)

This chapter attempts to offer a tightened-up synthesis of the development of REDUC's experience from its creation to the carrying out of the conference at the end of 1989. As well, the chapter offers a brief diagnosis of the current situation of the group of centres associated with REDUC, and a projection of the principal challenges that confront this network.

REDUC is a Latin American cooperative network in education to which 27 public and private educational centres are associated, and whose basic objectives are: (a) provide information to researchers, educators and decision-makers; and (b) support the production of useful scientific knowledge for those professionals and other social actors related to education, including the promotion of the use of that knowledge (9).

Through its summary preparation stages at a national level ("paper network"), regional level ("microfiche network"), and of training and promotion among users (with partial support of informatics), REDUC has been able to generate a certain tradition in the use of information on education. At the same time, it has promoted the social recognition of researchers and documentalists, facilitated interaction between producers and users of information, together with having helped to define basic literature on various themes in Latin American education. Currently, the network faces the challenge of offering opportune, adequate and efficient scientific information to diverse categories of social actors involved in the decision-making processes in education in the countries of the region.

2.1. Creation and Evolution of REDUC

REDUC was founded at the beginning of the 1970's, and arose out of a new culture of planning and development, and a concept of productivity and efficiency applied to social services. The information that had produced such spectacular advances in science and production should have produced the same in the field of education. The history of REDUC began via a concern for the productivity of the various educational systems. Knowledge emerges out of life's daily problems and its function is to create possibilities for solution via dialogue with other human beings, as pointed out by Patricio Cariola in the meeting prior to the Conference (10). Thus, the development of efficiency in education appears to be linked to access to scientific knowledge and its use in the decision-making process. Over time we have become aware that the relationship between accumulated knowledge and concrete problem-solving is far from being mechanical. It is really a conversational background that allows for the creation of solutions where the mere existence of and access to ordinary knowledge does not allow us to glimpse an effective outcome.

A data base system and network such as REDUC gives the researcher, planner or educational systems advisor access to the great amount and whole range of Latin American conversations on his/her subject of concern, and provides some light towards solutions of their particular problems. The data bases are not magic solutions developed by others, but rather tools of illumination for building your own solutions. A data base does not save you from thinking - it stimulates and enriches thought by putting you in contact with others' ideas. That is how REDUC in perceived today.

This evolution has been possible because REDUC developed as an organization that coordinates actions favouring a common objective. Such actions include the gathering, processing and disseminating of knowledge in order to provoke - in turn - other actions. In other words, these actions seek to evoke "conversations" that bring about agreements among individuals in order to provoke changes in education. More than a paper, plastic or electronic network, REDUC has characterized itself as a network of persons committed to the processes of social and educational change in Latin American countries. The tools it offers for generating knowledge have become tuned into the search for solutions to problems in the region.

Since 1977, this network of information in education functions in 17 countries, via 27 associated centres, as a regional cooperative project. Its principal activity has been the production of analytical summaries in the area of education (RAE's), the preparation of states of knowledge in education, and the exchange and use of educational information via the carrying out of seminars, training workshops and meetings of specialists, on both a regional and national level.

REDUC appears as a system of scientific inter-communication that gathers written reports on research

both completed and in process in Latin American countries, and places it at the disposal of its users. Its aim is to make education research and innovative experiences in this field accessible. Its general objective has been to eventually create a body of knowledge that serves as a basis for formulating Latin American thought in education, via the development of a language that serves as a bridge between accumulated knowledge and an approach to the educational problems in this region of the world. It is not about achieving a Latin American science of education, but rather a body of knowledge that recognizes the problems of Latin American education as distinct from those in other continents (11).

Among the specific objectives developed by the network, the following are highlighted: (a) to bring together documents about education in Latin American countries; (b) to process those documents in accordance with international indexing and classification norms; (c) to publish reports on the state of national education as detected via various publications; (d) to maintain a complete file of documentary background that recovers the historical memory of education in these countries; (e) to assemble information services lent to various types of users, including their training in order to achieve better utilization of the products generated by the network.

In the development of the network, we have received the support of outstanding specialists in Latin American education, who constitute the Technical Advisory Committee of REDUC. In a document produced for the previously-mentioned Conference (12), this Committee pointed out three phases in the history of the network. Firstly, it highlights the period in which the preparation of RAE's in Santiago, Chile was initiated (and their mimeographed publication), and of the efforts for ensuring the structuring and physical presence of the network in the countries of the region. It is estimated that this period lasted until 1977.

Then, in 1978, a second working period, consisting of the reproduction of the preparation and publication of RAE's in various countries of the region, was initiated. During this period researchers and documentalists were able to work together in the preparation of RAE's.

The third phase was initiated in the mid-1980's, and has consisted of achieving the dissemination and use of the network's products, implementing a micro-computer information program.

These three phases can be identified first with the emergence of the "paper network" (realized in the RAE's that circulate nationally or regionally); then via microfiches that allowed for the circulating of copies of reports processed regionally; and finally, the electronic network that is currently in its initiation phase.

The paper system was able to objectify a knowledge that was not easy to objectify due to the rapid growth of educational research publications during the 1960's and 1970's. The printing and distribution of RAE's allowed for access to thousands of research reports or educational innovations. Then, given the difficulty in access to the content of these reports, utilization of microfiches -which had been distributed to countries in the region- began. Thus, users were able to "dominate" the plastic, and readers of the microfiches increased enormously. In passing to the electronic stage, the system had not suffered great upsets given that it was designed to be computer-processed; and it was enough that the files be moved from one program to another in order to achieve that objective.

As well, REDUC has attempted to systematize Latin American knowledge in the area of education, furnishing instruments that allow for improvement in the synthesis capacity and joint visions on education and its principal problems.

The support given REDUC by the specialists of the Technical Committee since 1981 has led to the unfolding of new actions, with a view to making more intensive use of the information accumulated. During the second half of the 1980's, there began the preparation of states of knowledge or states of the art in various fields or problem-areas in Latin American education. The elaboration of these has allowed for the evaluation of the quality of RAE preparation, establishing the principal educational problems and solutions in a specific area, and providing processed and condensed information around a determined problem-area. However, given its rapid obsolescence -produced by the constant appearance of new publications- the ongoing production of states of the art in education is necessary.

The principal achievements of REDUC up to the end of the 1980's include: (a) having been able to establish a national and regional information system in Latin America; (b) having done this with a strategy of gradual growth and maximizing the scarce resources external to the network; (c) establishing a cooperative management of the network; (d) offering a diversity of products of information in education (including RAE's, states of the art, newspaper reports, states of research, etc.); and (e) making known global research production and production within the various sub-fields of education.

Aside from the success of the actions linked to REDUC's specific objectives, it is also worth pointing out its social contribution. First, REDUC has facilitated a social recognition of the professions of researcher and documentalist. Second, scientific research in education has been valued, and is now the subject of study, examining its tendencies and components. Third, REDUC has allowed for the recovery of information on education in countries in which this would otherwise have been lost. Fourth, the existence of the network has facilitated the identification of basic literature that deserves to be examined in relation to each one of the sub-fields of education. Finally, REDUC has contributed to the creation of a culture of use of scientific research in education, which was almost nonexistent in Latin America.

While it is true that the socio-political situation of some countries has made the application of the full REDUC model difficult -including the existence of national networks and interaction between researchers and politicians- generally it is possible to affirm that it has at least been attempted. In this way, as some countries have entered into processes of democratization that have valued the participation of various actors in the decision-making processes related to educational management, REDUC has been available for facilitating information and promoting all types of working meetings aimed at improving national education.

The current development of the network has led us to confront a series of challenges related to various categories of users, products, means of transmitting information, and work modes; and challenges related to the structuring and functioning of the network during the new stage that commences in the 1990's.

2.2. REDUC Facing the Challenges of its Growth

In accordance with the observations of the Technical Committee -advisor to REDUC on a regional level- the network currently faces a series of challenges linked to its own growth, and these can be grouped into three categories: structural problems, functional problems, and technical-financial ones (18).

From the structural viewpoint, the network is basically formed by documentation centres belonging to research organizations, centres for social-educational action, centres of higher learning, of educational planning or of educational research and development. The institutional nature of these centres also varies, as they can be private scientific foundations, non-governmental organizations, public organizations dependent on a Ministry of Education, university organizations, or regionally-located international organizations specializing in the field of education.

Within the network there are three types of centres. There are associated centres which fulfil the role of national coordination, prepare national RAE's, disseminate the latter and exchange them with other associated centres, and they have the responsibility for training users on a national level. The second type are the specialized centres, which generally are regional organizations dedicated to one aspect of education (eg, literacy, universities, or professional formation). The third type are the disseminating centres which can compile documents to be processed for the associated national centre, disseminate RAE's and other products of the regional network on a national level, and train specific users for their utilization. It is also possible to find some associated centres undertaking the responsibility for coordinating a sub-network specializing in a sub-field of education on a regional level. The general coordination of the network is the responsibility of CIDE in Santiago, Chile.

This variety of member organizations in the network creates certain tensions within it, especially when

one tries to deny the existence of differences that create tension among the members. It is important, then, to define certain "minimums" of production and equipment for each centre. In the case of the larger countries in the region (such as Argentina, Brazil and Mexico), there is more than one centre per country associated with the network, institutionally different but with similar tasks. In the case of regionally-located international organizations, it is possible to find better conditions of production and dissemination; yet sometimes it makes it difficult to make objectives and administrative agility compatible with those which are characteristic of the network. In general, this final type of centre is referred to as a "specialized centre" because it concentrates on only one determined area within the education field.

This situation has brought the Technical Advisory Committee to suggest that the forms of collaboration between the national centres and the specialized centres be established in written form; that minimums of production and equipment for each centre be defined; that norms be established for priority-setting in RAE preparation (14); as well as the need to be more precise about the functions of groups of centres interested in a sub-network related to a sub-field of regional education.

The structure of the network is also in transition towards the formation of an international non-governmental organization (ONGI). In effect, the bi-annual coordinators' meeting which took place in Brasilia in October 1987 authorized CIDE to present a proposal for official recognition of REDUC-ONGI, including e list of statutes, to the meeting which took place in Guadalupe in October, 1989. From on institutional viewpoint, this means that in the future REDUC will no longer be a project of CIDE-Chile, but will become a regional organization with a permanent secretariat and specific functions derived from its own executive council.

From the functional point of view, REDUC has been evolving from an educational documentation network to the promotion of spaces for discussion of the problems of regional and national education. In this sense, it is no longer sufficient to prepare and publish RAE's in order to constitute a support to the improvement of education, since information as such does not alter reality. But its use and application can bring about effective actions. For that, it is necessary to elaborate new products that reach new categories of users, distinct from those which REDUC has traditionally served.

Until now, the principal users of REDUC products have been researchers in education, students in pre and post-graduate education programs, university professors of education, some directors and teachers in the formal school system, social animaters in non-formal education and, on rare occasion, national and international functionaries or politicians responsible for education. However, if REDUC wishes to achieve a greater degree of influence for scientific research within the decision-making processes in education, it will have to make a greater effort in the future to achieve an improved processing of the information that is required in decision-making, and develop a habit for use of information in State organisms.

REDUC's current products, apart from the RAE's, include the elaboration and dissemination of bibliographies on national education and specialized themes; microfiches of documents processed regionally; states of current knowledge or states of the art in educational themes; and indices that allow for the localization of the information contained in the RAE's. All of the products of each centre associated with the network are exchanged with the products of the other centres on a regional level, on a cooperative, periodic basis. The services lent by the centres integrated into the network include: the training of users in the use of the above-mentioned products; the carrying out of periodic meetings of national researchers with educators and professionals interested in education in each country; the carrying out of regional meetings with scientific and/or network coordination objectives; and on some occasions, the carrying out of meetings between researchers and decision-makers in education. The sending of copies of documents and information on national education among the associated centres is another frequent service to network members. Each year, more than 20,000 individuals (primarily students and researchers, but also some planners and decision-makers) consult the products in REDUC's various centres (15).

REDUC's impact in Latin America is not only related to the availability of its products and services, but also to the socio-cultural conditions under which it deploys its actions. Together with contributing to the cultural development of the region, it is also possible to identify a series of actions improving educational systems -thanks to the existence of the network-associated centres- among which we would highlight: (a) the preparation of analyses of the state of national education, in order to then prepare development projects in Bolivia, Colombia, Costa Rica and Guatemala; (b) contracts that international organizations have offered to centres in Guatemala and Colombia for processing educational information in the respective countries; (c) the thousands of students, who each year prepare reports of REDUC-based documentary research, some of whom later move on to work as public functionaries, having developed the ability to search out and process scientific information; (d) the preparation of states of the art in specific themes dealt with at regional meetings, or distributed to international organizations. This also has an impact, although it is difficult to estimate its magnitude.

The organizing of conversations between producers of scientific research and decision-makers presents a series of problems, as much on the level of functioning of the REDUC system as the professional and cultural ethos of the two categories of actors previously cited. Firstly, the network has contributed tremendously to maintaining the historical memory of the evolution of national education, which is not conserved in the Ministries of Education due to the custom of many public administrators of taking this information with them at the conclusion of their mandate. This is even more difficult because much of the information which could be disseminated via REDUC is considered confidential, information to which the centres do not have access. Secondly, there are difficulties in the processing of information useful to decision-making, to the extent that the content of the research reports often does not offer a critical review of the relevant information, does not point out all of the elements that have an influence upon the

problem examined and its inter-relationships, does not deal with experiments or relevant innovations, does not systematize evaluations related to the problem dealt with, or it does not formulate recommendations coming out of the conclusions arrived at by the author.

The differences in style of the various researchers and decision-makers also manifest themselves. The former value the autonomous formulation of the problem-areas that they investigate; they value the significance of that in terms of its support to the clarification of the problems posed to science (taking into consideration the financial constraints of the research); they communicate their results in terms understood by their colleagues; they utilize primarily written and print language to communicate; they prefer long-term research; and they resent the simplistic application of their conclusions. Decision-makers invested with political power, on the other hand, value problems arising from social pressure; they use negotiation as their working tool and seek out general consensus when confronted with social pressure; they value those results which say something about decisions to be made around immediate problems; they use direct language -preferably verbal- in order to communicate, generally via the mass media; they prefer to comment on immediate problems; and they can conceal information which exposes government management to criticism. For them, joint work is difficult.

Nevertheless, there exists the challenge of organizing these conversations between researchers and specialists on the one hand, and decision-makers and politicians on the other. This implies not only the preparation of information useful to decision-making on the part of various actors related to the educational system; but also the power to organize around playing a more active role in the inter-mediation between the information needs of decision-makers and the generating of efficient response mechanisms. This challenge consists, then, of knowing how to confront the organization of conversations among the various actors in education. This means that the support functions are not sufficient, and there must be a move towards playing a more active role in the organization of conversations (linked to decisions) among the various users and in relation to the network.

As for REDUC, there are a number of opportunities for action that it can take better advantage of in the future, in order to achieve a greater impact in terms of the challenge described above. Among these, it is possible to highlight: the possibility of identifying specialists who serve as references (formal or informal) in the search for solutions to determined educational problems; the preparation of base documents that re-define the problem-areas dealt with at meetings of Ministers and others responsible for education; supporting the improvement of the quality of research by means of facilitating the review of relevant literature; training researchers in the definition of problems so as to contribute to decision-making; feeding the information in the current sub-networks to decision-makers, networks operated by the "Principal Project of UNESCO" (Proyecto Principal de la UNESCO) in the region; and support for the creation of new sub-networks specializing in education.

From the technical-financial viewpoint, REDUC's challenge is related to the need to modernize its processing and storage systems and make more efficient the recovery of information, all of which should be put at the users' service at reasonable cost.

In this sense, there exist immediate needs in the system as far as obtaining funds to prepare and circulate microfiches to all of the centres, and not simply the centralized preparation that currently exists in Santiago. As well, the computerization of the processing, storage and recovery of information requires common protocols and programs, and not just the common use of key words and formats for summaries. The circulation of information cannot depend on mail and defective telephones in the satellite era; it must move towards the use of electronic mail, the immediate transmitting of data, and other operations that telematics facilitates. The storage of a considerable mass of accumulated information by REDUC (close to 18,000 summaries and their respective documents), also requires an evaluation of the applications of CD-ROM (Compact Disk Read Only Memory).

The former should be examined not only in terms of compatibility within the regional network, but also in terms of its functional relationship to national networks of information in education which must reach a variety of national institutions (ministries, universities, research centres, schools, etc.).

Finally it is worth highlighting the problem of financing linked to the marketing of REDUC's products and services. To the extent that the majority of these currently constitute public goods not commercializable in the financial market, and to the extent that the socio-economic conditions of the users does not allow for their acquisition for personal use, it is advisable to develop institutional strategies for the use of these products and services.

While it is possible to determine with a certain degree of precision the costs of the REDUC system at a regional and national level, it is more difficult to precisely determine the economic benefits that the system generates, in spite of the important achievements and advances previously pointed out. The benefits are primarily perceived more in qualitative terms, and they do not count on an open market for fixing the price via free competition.

In specific historical moments when the economic benefits of social actions are emphasized, the danger lies in undervaluing the support that a system such as REDUC's can lend to the socio-cultural development of Latin America. Its products and services have the value of being able to contribute - although in a deferred way- to cultural autonomy and socio-educatio.. change. This autonomy also implies an improvement in the efficiency of the educational systems of the countries in the region, because it allows them to employ their true potential and to offer solutions to the problems that afflict them (16).

REDUC products have the characteristic of a "public good" because their value cannot be measured in market terms -via pricing or total amounts consumed- and given that generally it is not possible to sell them to all their users. As well, their consumption does not reduce the amount then available to other consumers, at an additional cost (17). Their non-quantifiable value is expressed by the sum total of values that they represent for each consumer, and indirectly by the benefits obtained by society as a whole.

These products have the value of being able to contribute, although in a delayed fashion, to cultural autonomy, beginning with registering the historical memory of education in these countries, and in that way contributing also to educational and societal change. This autonomy also implies an improved efficiency in those countries, because it allows for the employment of their true potential in detecting and resolving the problems that afflict them. With respect to that, it is worth noting the relative economic backwardness which is crudely reproduced within these countries (18).

Registering the historical memory, which results in accumulated information on educational research and which has a multiplier effect, translates into a greater number of solutions to basic problems in these countries. In this sense the historical memory fulfils the role of facilitator in educational change and social development, becoming -in Teillhard de Chardin concepts- the "most capable of human brains" that permits the growth of "the tree of life".

The centres have a role to play in these countries in the area of resolving educational problems. A UNESCO report points out that "communication can be an important tool in promoting the democratization of society and broadening participation in the decision-making process. This depends upon the structure, forms and administration of the storage, transmitting and recovery of data; as well as the way in which that facilitates greater access and opens up the communication process to a free exchange of ideas, information and experiences among peers" (19).

The most concrete contribution of the centres is that of orienting researchers around the most pressing problems in education. This is best brought about when contact exists between the research field and the reality of educational problems, thus allowing one to obtain and elaborate upon the pertinens information accumulated. Contact between centres is also important because it enriches their overall production.

As well, given the increasingly growing production of knowledge, not having available one's own information process and use means, of course, a dependence upon outside sources and a new cause for North-South imbalance with its consequent negative effects. It is worth pointing out that, of the 1150 public data bases existing globally, 60% are in the United States, 30% in Europe and the remainder within international organizations, with little significant participation of developing countries (20).

Annual income from sales of information services is $ 2,000 million US, with an approximate cost of 2 million dollars US per data base and an annual growth rate of 24%. This has meant that, in the U.S., the large corporations have entered into this area (21).

Another important aspect is the advance shown by REDUC in the formation and production levels of new centres, and this within the context of a depressed economy. The growth of the GNP per inhabitant in these particular countries was less than .6% between 1973 and 1983 (22). This means that REDUC as a whole experienced significant growth even while the continent was beset by various problems, including a worsening in the situation of income distribution that is a direct result of economic recession (23).

It is possible to conceive of REDUC as a productive organization composed of various production units involved in the converting of resources into final goods: information on research in education. For this conversion, the centres gather research works as "input", which are than processed and ordered by the human and material resources of the centre, structuring them in such a way as to make possible their later recovery by other users. In carrying out this function, the centres incur expenditures for the utilization of these resources, and such costs are higher when the quality or standards are higher.

Likewise, the centres obtain benefits that result from its products, and these are greater when the quality or standards are greater, thus generating even greater benefits that will mean a more relevant contribution to research in each country and on the continent generally. In this way, the knowledge accumulated will be even more useful (24).

The benefits generated by the existence of REDUC products are impossible to quantify directly because, just like its costs, their value is not expressed in market terms. However, there are alternative ways of estimating such benefits; for example, according to the usefulness assigned to an equivalent centre in a developed country. A system comparable to REDUC is the ERIC system in the U.S., which has an overall expenditure of $ 136 million annually and a frequency of use of its products of 2.7 million. If we divide the annual expenditure by frequency of use, it has a value equivalent to $ 50.00 US, although its cost to the public is much lower. There are 3,269 centres that provide access to ERIC products exclusively, at an overall cost of $ 26 million annually. This means an expenditure per centre of $ 7,954.00 (25).

These values can be compared to the costs of each REDUC centre, within certain parameters -for example, education expenditures in each country. In the case of the U.S., the percentage in the ERIC system represents .1% of the total expenditure in education in the U.S. This means levels six (6) times higher, on the average, than the annual budget or cost of each one of the centres (26).

Finally, commercialization refers to the action of discovering needs within the education research "market" for new products to be generated by the centres; as well as efforts to introduce different products

as these are desired by "potential clients". Indicators selected for this item are:

a) Actions carried out to detect products that should be generated by the centres in relation to needs on the "market";

b) Establishing a relationship between the cultural and commercial value of the products; and,

c) Distribution of the products, measured in terms of: i) cost involved in defining potential products' ii) types of activities carried out; and, iii) quality of these activities.

Notes from Chapter II:

8) Summary based on the presentation by Luis Brahm, General Coordinator of REDUC.

9) Schiefelbein, E.; Impact of the Regional Educational Documentation Systems in Projects and Policy Development. Santiago, Chile. UNESCO-OREALC. October 1990. Mimeo.

10) Cariola, P.; REDUC: Comunicación y Acción ("REDUC: Communication and Action"). Royal Monastery of our Lady of Guadalupe, Extremadura, Spain. October 1989. Mimeo.

11) Munizaga, G.; REDUC: Su Historia y su Desarrollo. ("REDUC: Its History and Development"). Santiago, Chile. REDUC, 1990. Op.Cit.; p.7.

12) REDUC Technical Committee: Reuniones del Comité Técnico de Guadalupe y Badajoz. ("Meetings of the Technical Committee in Guadalupe and Badajoz"). Spain. October 6, 1989.

13) Ibid, Op.Cit.

14) Such as, for example, to maintain the co-relative numbering and identification of the centre of origin each time that a RAE processed by a regional centre is published by a national centre; but maintaining the national co-relative numbering in the case of documents that refer to the country's centre that prepares a new RAE.

15) Schiefelbein, E.; 1990. Op. Cit.; p.2.

16) Corvalán, O., and R. Gillet; Evaluación de los Centros REDUC ("Evaluation of REDUC Centres"). Brazilia. Presentation at the Fourth Encounter of REDUC. July, 1987.

17) These characteristics correspond to the "principle of exclusion" and "non-rivalry" in consumption, respectively, of a public good.

18) The annual GNP per inhabitant in the countries of the network is approximately $ 1,600 US, in contrast to $ 10,600 US in countries of the Organization of Economic Cooperation and Development. Source: World Bank.

19) UNESCO; International Commission for the Study of Communications. Problems: Many Voices, One World. Paris. 1980; p.265.

20) EUSIDIC; Data Base Guide 1983. Learned Information Ltd. Oxford, UK. 1983.

21) Rodríguez, G.; El Desbalance del Conocimiento. ("The Imbalance in Knowledge"). In "Cono Sur". Santiago, Chile. FLACSO, Vol.II, No. 4. November-December, 1983; p.12.

22) This does not differ substantially from one country to another in Latin America and the Caribbean. Source: World Bank.

23) The growth of RAE's in the past year and a half was approximately 30% (1986 to June 1987).

24) When we refer to benefits, we mean social benefits.

25) ERIC Directory, Information Service Providers. May, 1986.

26) Expenditures in education per country were obtained from the UNESCO statistical yearbook; the cost of the REDUC centres was obtained from the annual activity plans; and the information about ERIC from the source previously cited.

Chapter III

PANORAMA OF LATIN AMERICAN EDUCATION RESEARCH

This chapter presents a brief panorama of the educational research carried out, within and outside Latin America, around education problems in countries of the region. On the one hand, it analyzes the recent evolution of the principal themes and methodological focuses; and on the other, the gaps in existing knowledge, the limitations (institutional and cultural) to the development of education research, and the need for data base support in research work.

Research themes can refer to sub-fields of education, to its global development, or to the methodologies themselves utilized for its analysis. Over the last few years, it has seen a gradual change from themes related to an increasing concern for the introduction and improvement of educational systems, towards themes related to learning, the knowledge that is communicated in the school, and to the relevance of education. In the brief Latin American research tradition, the generic and non-specific treatment of the themes investigated appears to be a limitation in its application to the design and management of policies in education.

Beginning with the analysis of the problem-area investigated, there also emerges the analysis of the evolution of interpretive frameworks of the Latin American educational reality. From the interpretive frameworks come the methodologies applied to the research carried out in the region, and its recent evolution.

During the 1980's, empirical studies in education diminished, those which in their majority were sponsored by international organizations. Meanwhile universities, in general, produce studies of an essay-type, and often the majority of the authors do not sufficiently take into account all that has been

accumulated on the theme they are researching. This latter situation also occurs with authors from industrialized countries who write about Latin American education without sufficiently taking into account native research already produced.

Within the development limitations of Latin American research, we would highlight the following: institutional limitations, the lack of resources in the Ministries of Education, and the underdevelopment of support services in these Ministries. The type of research that is developed is strongly influenced by the sponsoring organizations. International organizations concentrate on empirical studies and syntheses of the state of knowledge on specific themes; universities specialize in the production of general essays tending towards the orientation and foundation of educational development; non-governmental organizations for social action prepare reports on the results of educational programs with socially-disadvantaged groups; and the Ministries produce statistics necessary for the management of scholastic education. The fundamental problem however, consists of the lack of financial resources for the development of education research.

This problem of development of education research presents dilemmas for both researchers and their sponsoring institutions, which have immediate consequences in the orientation and objectives pursued by REDUC. This scarcity of resources often translates into recommending their concentration on the search for educational responses for marginalized groups, and providing them with new potential via the development of education research networks.

For REDUC, this raises the problem of whether to dedicate itself to simply being a passive actor that compiles the research produced (whatever its content), or of playing an active role in the orientation of the researchers, pointing out weak areas in the application of informed focuses on the decision-making processes in education. In fact REDUC has been evolving, from accumulation/dissemination functions towards use/application functions, on the part of qualified decision-makers, be they teachers, administrators, families or politicians.

Together with presenting a panorama of the current tendencies in education research in Latin America, we include some cases of European investigation in this area. As well, we summarize the conclusions and recommendations reached by two states of the art (on primary education and learning styles) commissioned by REDUC and presented at the Conference. The general proposal of this chapter consists of pointing out the dilemmas and demands that the current development of Latin American research creates for REDUC.

3.1. Recent Evolution of Education Research in Latin America

Since the end of the 1970's, REDUC has been carrying out periodic studies which have noted the recent evolution of the content, methods, sponsors and geographical coverage of Latin American education research (27). For the Conference on Information in Education (which motivated the writing of this report), REDUC commissioned a new study that would report on the recent evolution of the above-mentioned parameters (28). As well, it solicited a German specialist to summarize the tendencies in research on Latin American education in the Federal Republic of Germany (29), also counting on the support of other European participants during the conference itself (30).

García-Huidobro, Ochoa and Tellez (1989) prepared a study -which was presented at the conference by the first of these- in which, on the basis of 1,000 RAE's selected and recorded from among 4,000 published by REDUC between 1977 and 1988, they analyzed the organization of education research and innovation in Latin America. At the same time, they examined the characteristics of the research reports, the types of education referred to in the research, the material approached, its focuses and methodologies, as well as the study of the relationship between education and poverty.

The conclusions of these authors indicate that research is paying special attention to the educational problems of socially disadvantaged sectors. However, it is difficult to maintain that the research is making a significant contribution to the design and evaluation of educational policies, since it appears to have "contradictory characteristics, some of which approach the potential to make that contribution and others which impede it" (31).

This study attempted to be more familiar with who, where, on what themes and with what methodologies education research is carried out; together with comparing publications produced in the 1970's with those of the 1980's. The first question refers to the origin of the research; that is, to the agencies that produce it. The majority of research-producing institutions are concentrated in the countries of the so-called "Group I" (Argentina, Brazil, Chile, Panama, Uruguay and Venezuela), which are countries of relatively greater development and in which 75% of the documents in the selected sample are concentrated. Following are the countries of "Group II" (Costa Rica, Colombia, Ecuador, Peru and the Dominican Republic), where 20% of the documentation produced is concentrated. The remaining Latin American countries would be producing only about 5%.

From an institutional viewpoint, the study indicates that only one-third of this production corresponds to international agencies, which during the 1980's had doubled their relative weight compared to the 1970's. In all of the national organizations together, more than half of the research production happens in private centres or scientific foundations. The other half is divided between university organizations and

government institutions (including Ministries of Education). Together with the decrease in national research production during the 1980's, one also observes a decrease in documents on Latin American education produced outside the region.

The analysis also indicates -cross-referencing the country of origin with the agency producing the research- that in countries of relatively greater development, production is concentrated in private centres. While, in countries relatively less-developed, production is concentrated within the Ministries and non-governmental organizations. In general, however, it can be maintained that document production has increased on the part of non-governmental organizations.

In terms of the characteristics of the documents on education research, the study indicates that 5% refer to international meetings, 20% to reports on educational program experiences, and that of the studies carried out, only 20% were of an empirical nature. Nevertheless, such studies had doubled over those of the previous decade, having maintained an almost constant proportion between reports of meetings and those on experiences.

The analysis -cross-referencing the producer agency with type of document produced- indicates that universities stand out in the category of experimental studies; international organizations produce non-empirical studies and reports of meetings; non-governmental agencies produce reports on experiences; and private centres have a high proportion of the last two categories of documents.

It is worth pointing out that, to the extent that only one-fifth of the studies are of an empirical nature, the possibility of adequately identifying the evolution of the principal educational problems in these countries is made difficult for both academics and politicians.

The production of education research is strongly concentrated around particular countries in Latin America, but a high percentage (40%) of documents and reports that refer to the entire region is also produced, with the corresponding lack of specificness that accompanies it. Among these producers we would highlight international organizations.

As for the evolution of thematic emphases in research, the production of studies on literacy, primary education and non-university post-secondary education increased during the 1980's. These demonstrate, as well, that universities have a preference for carrying out studies about their own work.

From an analysis of the themes studied, the lack of studies and research works on an important group of subjects is obvious. Among these we would point out: education via correspondence schools, televised education, the teaching-learning processes linked to disadvantaged groups, teachers as a group, the

characteristics of students in both rural and urban areas. In general, there is a lack of research on the impact of the development of science and technology on socio-productive and educational change. Along with the research gaps pointed out above, Dr. José María Cobo Suero adds the lack of studies on the cultural identity of the Latin American people; Dr. Ernesto Schiefelbein points out the lack of statistical studies that would facilitate the decision-making process; and García-Huidobro pointed out the general lack of documentation in the public sector.

To the problems arising out of the content of the studies, we would add some related to their dissemination. In spite of having improved the physical presentation of research reports in the 1980's (via a decrease in mimeographed articles) the commercial distribution of these studies only reached 4.7%.80% of the reports are edited by the units that produce them, and 16.1% are published in periodicals. Confronted with this weak distribution, regional and national meetings serve as an insufficient substitute to achieve greater dissemination, given that these meetings appear to serve as an incentive for researchers to write about the results of their studies. In general, it is the universities and private centres that stand out in the search for commercial editors for distributing their studies.

As for the content itself of education research, Dr. Manuel Gutiérrez Vásquez points out the lack of methodological rigor of some studies, whose results can lead to a certain amount of confusion in the decision-making processes, as well as a tendency to ignore what has been investigated by others on the same theme. Together with Gloria Calvo, he also points out the need to further promote shared knowledge among education researchers, and the possibility of doing studies of "quotations indices" in order to be more familiar with the documentary base that defines a particular educational problem. The lack of quality, however, is not exclusive to Latin America. At the conference it was pointed out that in the industrialized countries, researchers are under pressure to publish as much as possible, sometimes at the expense of quality.

Dr. Cobo Suero pointed out the importance of the development of research as a means of achieving a greater independence in the economic, political, social and cultural areas, emphasizing that this does not always require greater economic means for their production. At the same time, he pointed to the exchange that can be produced between Latin America and Spain to the extent that -while Latin America can contribute to studies on the educational treatment of adults, marginalized minorities and confronting scholastic failure- Spain can contribute to more theoretical studies and planning in the fields of evaluation, curriculum design and education in general.

3.2. European Education Research on Latin America

Given the non-existence of an organization that links European researchers interested in Latin American

education, it was difficult for the Conference organizers to count on a full panorama of European research production in this regard. In reality there exist associations of researchers interested in Third World education in general, in some countries; but these often do not have an up-to-date inventory of research projects, completed or in progress, carried out by their members.

In order to fill this gap, European participants contributing to the Conference were asked to share the experience accumulated in their respective countries in the area of Latin American education research.

Ulrich Erhardt, doctoral candidate in the Faculty of Education at the University of Heidelberg, presented a paper entitled "Research on Education in Latin America Carried Out in West Germany", which served as a basis for the conference session that analyzed this particular theme.

Erhardt outlined that scientific research on Latin American education is relatively recent in the Federal Republic of Germany, given that the people of this country have traditionally been familiar with the views of writers of utopias and essayists that presented a rather idyllic view of Latin American reality.

It is interesting to note, however, that there currently exists a Latin American program in 18 universities in West Germany, which signifies a growing interest in this area in spite of the working limitations encountered by those who specialize in this subject.

The two themes that have dominated, according to Erhardt, in the scientific research carried out in the 1980's, have been the conceptual debate around professional formation in Latin America and studies on the decolonization of learning.

With respect to the former, discussion has included the problem of professional formation for the so-called informal sector of the economy, the role of West German cooperation in the area of development projects, and the evaluation of the dual model of professional learning that has been embodied by cooperation projects in this area. "There are increasingly more people who doubt that in the past a concept of adequate support towards development in terms of aid in the area of professional formation had been applied; and that, more over, they consider that the practical reality of the policy applied in this sector has not supported anything worth mentioning to counteract the shortages experienced by the majority of the population of many developing nations", states Erhardt, quoting Axt. (32). As a result, some German researchers call for a re-orientation of Latin American professional formation to benefit not only the modern sector but also the informal sector of the economy, within the framework of development cooperation organized around the slogans "struggle against poverty" and "the fostering of self-help".

The theme of decolonization of learning is being dealt with in West Germany beginning with the works

of Paulo Freire, Francisco Gutiérrez and other theorists in the field. Together with concepts of the pedagogy of liberation, linked to the dependence hypothesis developed in Latin America, German authors such as Zimmer have extended the field of community education.

Essentially, research projects related to the decolonization of learning tend to analyze the relationship between learning and local transformations, and with respect to the socio-political organizations of marginalized groups.

Erhardt concludes that, in spite of the relative development in Latin American education research in West Germany, this does not exist as an autonomous branch but only within a broader context of social research on the so-called Third World. "University research on Latin America presents two specific problems: 1) the lack of university infrastructure in the form of programs or institutes specializing on Latin America; 2) this results in a large part of the research on Latin America being carried out by scientists who undertake other functions in research and teaching at the same time".

However, the existence of foundations linked to the main political parties in West Germany, on the one hand, and the presence of 1,357 agreements of cooperation between German and foreign universities (of which 25.7% are universities in the Third World), provides greater possibilities for a continuous dialogue between German and Latin American education researchers.

Professor Carmen Labrador, of the Complutense University of Madrid, informed Conference participants of education research on Latin America carried out by this particular university, differentiating among three stages in the development of these works. The first, between 1950 and 1965, was a period in which one sought to research the History of Latin American Education via four doctoral theses and various masters'degree theses. The themes developed referred to educational institutions in the region, and in particular the development of Universities and Colleges created in the 16th Century, as well as the educational activities of Spanish missionaries.

The second stage of research developed by this University takes us to 1980, a period in which interesting works on Comparative Education, and studies of the educational systems of various Latin American nations, were developed. The third stage refers to the 1980's, during which a growing interest in historical themes of each period is demonstrated; as well as an interest in comparative research of the current nature of the various educational systems, and in specific themes such as popular education and others in effect in Latin America.

Apart from the research activity linked to the preparation of theses, the investigative activity present in single-theme conferences -such as that which took place in 1988 on the history of education, in the city

of Seville- is also relevant.

In Madrid, the University of Comillas has also distinguished itself for its interest in Latin American education. This has taken place largely via the publication of books (33) and the University's magazine, in which each edition dedicates space to the publication of studies on education in Latin America.

Nevértheless, until now the preparation of such studies represented more individual works or that of teams of teachers and students (34), and have been carried out with few documentary and information resources. In spite of that, one notes a growing and important interest in the study of Latin American education, with hopeful perspectives and attempts at institutionalizing research on education in Latin America in a systematic and on-going way.

Professor of cultural anthropology at the University of Utrecht in Holland, Jan Ooijens -who is also a member of the CESO Council -reported at the conference that in both academic centres where he works, studies are being carried out on Latin American education, generally in the form of a doctoral thesis. CESO in particular coordinates and promotes education research on the Third World, and in Holland there are some 120 professionals and researchers who have a particular interest in this theme. They have joined together in a professional association called WGOO.

Some researchers take advantage of applied research opportunities offered by technical cooperation programs in Holland. There also exist agreements for inter-university cooperation between Dutch and Latin American universities, among which we would highlight those of San Carlos and Landivar in Guatemala, the University of Querétaro in Mexico, as well as universities in Peru, Costa Rica and Nicaragua. In some cases, it is the universities themselves that must absorb the costs demanded by the activities coming out of these joint working agreements.

The type of studies carried out with the support of Dutch technical cooperation is generally of an evaluation nature. In other cases, it involves the study of the effects produced by cooperation projects. For example, with funds from the Ministry of Cooperation in Holland, a book on the relationship between education and cultural identity (35) -based on an educational experience between 1981 and 1984 in Vaupes, Colombia with funding from both countries- was published.

The majority of themes researched by Dutch specialists in this field refer to non-formal education and higher education, given that many of the authors have worked in Latin America on projects of technical cooperation or university cooperation. To the preceding we would add themes on radio education, school desertion and anthropological studies. The majority of the studies have been carried out in countries of the Andean and Central American regions (36).

3.3. Desertion and Learning Styles: Two Fundamental Problems in Latin American Education

With the objective of contributing, with systematized information, to the decision-making processes related to the qualitative improvement of Latin American education, REDUC solicited the carrying out of two states of the art that report on strategies used for improving access to and permanence in primary schooling on the one hand; and on the other, of the distinct learning styles of diverse socio-cultural groups, which do not necessarily coincide with the standardized learning strategies of the schools. Both presentations were followed by interesting discussions on the part of the participants, which are summarized in this section.

The Director of CEE (in Mexico), Luis Narro, presented a study carried out by two of the centre's researchers (37) on how to improve access to and permanence of young children in primary schools.The carrying out of this state of the art was of a documentary-research nature which required a comprehensive theoretical framework whose objective was to permit the organizing, processing, analyzing and interpreting of a multiplicity of documents of a diverse nature, focus and depth on the above-mentioned theme. The work was made possible by virtue of the information processed by REDUC via the RAE's and documents available on microfiche. Its objective consisted of systematizing information useful to educational decision-makers in Latin America.

In summarizing the study's conclusions, it was pointed out that, while it is clear that the socio-economic and cultural conditions, resource assignment and school structure are strongly associated with the possibility of remaining within the educational system ("permanence"), it is the internal factors of the educational system that define scholastic success or failure. The documentary also showed an evolution in the interpretation of scholastic failure, from unilateral perspectives that attribute the greatest weight to only one factor, towards more integrated perspectives that view the phenomenon from an interdisciplinary angle.

From this fundamental observation obtained through the carrying out of this study, it follows that the proposals for a solution also evolve from a change in the single-factor mentality towards an education that takes into account distinct realities. Nevertheless, among successful strategies, the need to integrate the family for achieving greater efficiency and relevance stands out, beginning with a perspective related directly to the local situation.

Reaching the goal of primary education for everyone requires the decided cooperation of public education authorities, but it also requires the coordinated action of parents, teachers and students, beginning with a recovery of the richness of the local culture. The more recent tendency is to visualize the problem of school desertion within an integral context that involves the family and the community in the

educational service, in order to achieve a greater relevance in primary education.

As a strategy which is an alternative to standardized schooling, CEE has elaborated two basic proposals. The first maintains that, in order to achieve primary education for everyone, it is necessary to avoid differences in what is offered in terms of pertinence and quality. This will require education to be evaluated firstly by its users and by the actors in the system, so as to achieve an opportune improvement through support activities of a compensatory nature. The second proposal consists of putting into practise projects of an experimental nature that allow for the diagnosis and projection, in each case, of the measures necessary for this improvement. In summary, it proposes that primary education for small children be defined in terms of effectively providing basic life tools which are therefore relevant. At the same time, it means that, in primary or basic education for adults, what is learned is more important than what one has received credits for.

Professor Joseph P. Farrell, of the University of Toronto, in the discussion that followed Luis Narro's presentation, pointed out that it is necessary to be more precise about the concept of quality in education. He indicated that basic universal elements influence that quality, among which he noted infrastructure, equipment, textbooks, teachers being effectively present in the teaching process, together with students whose nutrition and clothing needs are effectively met. Then there are elements that vary from one place to another and that must be resolved prior to seeking more complex solutions-for example, parents who do not wish their children to attend schools with unsanitary conditions. However, he emphasized that the problem is not the schools as such, but the search for strategies to increase learning opportunities. He also argued that, given that in every community there are some teachers who have the reputation for being good instructors, it is possible to characterize them and to observe their teaching styles, which generally are very flexible, varied and changing. These teachers do not hesitate to combine elements of formal and non-formal education within a new design.

UNESCO specialist, Dr. Ernesto Schiefelbein, also noted the need to distinguish between basic and complimentary elements in a strategy for improving the schools, emphasizing the need to design the best options for improving what takes place in the classroom, for example a support guide for the teacher. He expressed confidence in the possibility of implementing strategies in which, on the one hand, the teachers are able to change their attitude in spite of the low salaries they receive; and, on the other hand, the community itself can lend support to primary education if it judges it to be relevant to its educational needs.

The specialist from INN (Uruguay), Dr. Sergio Nilo, noted the absence of an analysis of a whole set of macro-social factors that condition the effectiveness of primary education, among which were highlighted: the low level and volume of state resources, violence, malnutrition, forced migration, authoritarianism and

political divisions, drug-trafficking and consumption, and other forms of social escapism. He also indicated the lack of experimenting with strategies that combine varying schedules, extended hours in the classroom and other changes that take into account the physical deterioration in poor children caused by the nations' financial crises.

Various participants mentioned the problem of low salaries received by teachers and their desertion to higher-paying occupations; as well as the demotivation among students and heads of families who observe with apprehension the lack of working opportunities and the consequent irrelevance of school. In this latter situation, the inter-generational dynamic produced in the lessons and the conflictive roles of parent and student-worker, have special relevance. As long as teachers have to go on strike in order to improve their meagre salaries, it is difficult to then provide them with enthusiasm for adopting new learning strategies that elevate the quality of primary education.

Luis Narro insisted on the need to identify those variables that, although foreign to the educator, influence pedagogical results. He also insists that, in using these, it is possible to manipulate the variables in spite of the contextual problems. He emphasized that what the adult learns, in or out of school, should orient what is learned in the childrens' schools, independent of accreditation received. For that it is necessary that the teacher regain confidence in her/his ability to think and to teach, improving their self-esteem, valuing their culture and that of the students and their parents.

Following this discussion, Professor Teresinha Nunez de Carraher, of the University of Recife in Brazil, presented a study based both on experimental research she had carried out, as well as on a documentary investigation, on learning styles related to different socio-cultural groups (38).

Firstly, the author questioned the concept of intelligence wielded by the school institution, that which prioritizes intellectual work over manual labour and emphasizes segregation between school and work. At the same time, she criticized the perspective that it is possible to measure levels of intelligence via tests applied in the schools.

On the contrary, she maintained that varying degrees of intelligence imply, rather, learning styles that differ from person to person. On the one hand, we know that children can increase intelligence levels but we do not know if that necessarily has an effect on school learning.

On the other hand, we know that the socio-economic and educational level of the parents has a direct effect on the scholastic learning of their children. In this way, the author concluded that such "intelligence tests" are more a demonstration of abilities developed in the school. These abilities, however, are those of determined social classes or strata. Yet we also know that learning levels are directly influenced by

levels of nutrition and by the lack of stimulation that is prevalent in the lower social strata.

Secondly, Professor Carraher maintained the hypothesis that the level of scholarliness develops the ability to successfully confront these so-called intelligence tests. At the same time, she emphasized that there exist important group differences caused by the relationships existing between culture and learning styles linked to determined socio-cultural groups.

During the research carried out by the author about how, what and where children of the popular sectors learn, she observed that there are amplifiers of the action, sense and organization of reasoning. In general, children in the popular urban sectors learn more arithmetic in the street than in school. For example, they apply the principles of correspondence of elements and labels, they use the same order and apply the principle of cardinal numbers that indicates that the last label is that which refers to the set.

Finally, the author argues that, on the one hand, the possibilities of problem-solving increase with the use of amplifiers; and that, on the other hand, abilities linked to "expertise" increase intelligence levels.

During the discussion that followed this presentation, various conference participants intervened. Dr. Patrick Scott, of the University of New Mexico, maintained that learning is a complex process whose analysis obliges a broad vision of the factors that influence it. Intelligence tests, however, are instruments necessarily stamped by the local culture. He lamented the lack of Latin American studies on the expectations of teachers and of society with respect to school learning, given that motivation normally becomes dependent on expectations.

Sergio Nilo noted various situations experienced by teachers in local schools, in different Latin American countries, in which the prejudices that some teachers have about the development of intelligence of Native and popular sector students were very clear, which are nothing more than an attempt to rationalize phenomena linked to the poverty of these students.

Juan Eduardo García-Huidobro agreed with Sergio Nilo on the need to study prejudice in the schools. In order to eradicate it, he proposed strategies centred on actions with teachers and the families of these children (especially the mothers), based on the success achieved by programs of non-formal education organized to support the child in school.

Christopher Martin, of the Agricultural University of Wageningen in Holland, and María Eugenia Dengo of REDUC-Costa Rica, fully agreed that learning on the part of poor children is made difficult to the extent that texts and learning situations created in the school are not related to their daily lives. This brought them to recommend the need to research the ways, styles and forms of studying that children from

socially -disadvantaged sectors have, both in and out of school, with the objective of providing the greatest potential to school learning. Dr. Dengo also emphasized the need to study the role of mothers in the support of learning processes of socially-disadvantaged children.

Dr. Lorenzo Guadamuz, of the Costa Rican Ministry of Education, insisted on the study of communication codes as a way of clarifying possible blocks that exist in the learning processes of children pertaining to groups socially different from those in mind at the time of designing learning strategies in the schools.

Alfonso Lizarzaburu, from Peru, placed the participants on guard with respect to determined learning strategies that limit or place a ceiling on the possibilities of subsequent learning development. He emphasized that every educational program must take care in defining a learning strategy that facilitates access to higher levels of knowledge.

Following this discussion, Professor Carraher insisted on the importance of the school incorporating into its learning strategy, informal strategies that children from the popular sectors learn outside the school. Disagreeing with learning theories developed by Piaget, the author maintained that it is also possible to learn in the school that material which the children may not immediately understand.

On the other hand, she observed that the teacher dedicates a different amount of time to her/his students according to the expectations that s/he has of the child's capabilities, a situation that can also be observed in the physical placement of each child within the classroom. However, other more subtle aspects of classification that teachers make of the presumed capabilities of the students are more difficult to study. Finally, the author explained that the expectation levels of the parents with respect to the academic learning performance of the children varies over time, being more intense at the beginning (during the learning of reading/writing), and diminishes as school is perceived to be less relevant.

3.4. The Challenges that Research Presents to REDUC

The transformation of the results of education research into useful and opportunely-available information for educational policy and program decision-making, constitutes the major challenge currently confronting REDUC.

While REDUC has the greatest amount of documentary information on Latin American education, the collection of information that can be obtained from this system is not equivalent to what could be obtained from an encyclopedia or other data bases such as ERIC or EUDISED (European Documentation and Information System for Education). Professor Miguel Petty, from the University of Córdoba in Argentina, expressed during the Conference that on occasion it is useful to complement REDUC's information with

that published by Thorsten Hussen and N. Postlewaitte in their International Encyclopedia of Education.

Given that, until now, the majority of Latin American countries associated with REDUC do not have the documentary information computerized, seeking out that information has meant following a particular routine: first, identifying the keywords related to the research theme; second, examining the RAE's on publications related to the theme; then, if appropriate, reading the microfiches of the document in question. However, this work method represents true documentary research, which it is not always possible to carry out with the agility required by educational decision-makers.

Notes from Chapter III:

27) García-Huidobro, J.E. and Ochoa, J.; Tendencias de la Investigación en Educación en América Latina. ("Trends in Education Research in Latin America"). Santiago, Chile. CIDE, 1978.

García-Huidobro, J.E.; Orientaciones de la Investigación Educacional en América Latina. ("Orientations of Education Research in Latin America"). Santiago, Chile. CIDE, 1984 (RAE 3.670).

ICFES/UPN; Dirección de la Investigación Educativa en América Latina. ("Direction of Education Research in Latin America"). Third National Seminar on Research in Education. Final Report. Bogotá, 1986.

Gutiérrez, G.; Panorama de la Investigación Educacional en América Latina. ("Panorama of Education Research in Latin America") Discussion Paper 1/1988. Santiago, Chile. CIDE, 1988.

28) García-Huidobro, J.E., J. Ochoa and F. Tellez; Tendencias de la Investigación sobre Educación en América Latina. ("Trends in Research on Education in Latin America"). Santiago, Chile. CIDE, September, 1989.

29) Erhardt, Ulrich; La Investigación Educativa sobre Latinoamérica Realizada en Alemania Occidental. ("Education Research on Latin America Carried out in West Germany"). Paper presented by the author at the Badajoz Conference. October, 1989.

30) Commented on in Section 3.2. of this report.

31) Ibid; op cit; p.46.

32) Erhardt; op cit; p.7.

33) University of Comillas; España-América 1492-1992:Conme-moración de un Centenario. ("Spain-America 1492-1992: Commemoration of a Centennial"). Madrid. University of Comillas. 1988.

34) Cobo Suero, J.M.; La Enseñanza Superior en el Mundo. ("World Trends in Higher Education"). Madrid. Ed. Narcea. 1979.

35) Alfonso, L.A. et al; Investigación, Educación e Identidad Cultural. ("Research, Education and Cultural Identity"). La Haya, CESO. 1987.

36) It is possible to obtain a list of publications written by Dutch authors from Prof. Jan Ooijens (see address in Appendix N°2).

37) Muñoz Izquierdo, Carlos and Sonia Lavín de Arrivé; Estrategias para Mejorar el Acceso y la Permanencia en Educación Primaria. ("Strategies for Improving Access and Permanency in Primary Education"). From C. Muñoz, ed.; Calidad, Equidad y Eficiencia de la Educación Primaria: Estado Actual de las Investigaciones Realizadas en América Latina. ("Quality, Equality and Efficiency of Primary Education: Current State of Research Carried out in Latin America"). Mexico. CEE-REDUC. 1988, p.121-188.

38) It is not possible to reproduce here the wealth of this research. We invite the reader to consult the paper by Prof. T. Nunez de Carraher: Estilos de Aprendizaje y Grupos Marginales: Revisión de Investigaciones ("Learning Styles and Marginalized Groups: Review of Research") from the book Sociedade e Inteligencia. Sao Paulo. Cortéz Editora. 1989.

Chapter IV

THE USE OF INFORMATION ON EDUCATION IN POLICY FORMULATION

In the relatively short Latin American research tradition, research focuses oriented at obtaining results directly useful in the formulation of educational policies are not common. REDUC, in serving as a link between the production of scientific research and various categories of users related to both scholastic and non-scholastic education, has encountered a series of stumbling blocks to be gradually overcome in order to achieve greater dissemination of research results. It has also been necessary to note the needs that have been formulated by various types of users interested in research results.

Education research specialists, as well as the REDUC associated centres themselves, are conscious of the difficulties represented by the challenge of achieving an adequate level of use of the information accumulated and that is being accumulated with ever greater speed. On the basis of experience gathered in the 1980's -when the education financing crisis forced the formulation of a series of questions around how research can contribute to the efficiency and equity of educational systems- we begin the 1990's with only a few convictions and many questions.

Therefore, on the one hand, one recognizes that the Latin American research tradition does not emphasize the production of reports with policy recommendations that are adequately evaluated in light of the scientific information available. On the other hand, we also recognize the complexity of the mediation processes between the production of knowledge on the part of researchers, and their application on the part of diverse groups of decision-makers, such as politicians, students, family heads, civil servants and educators.

Experiences in the use and application of education research that other regions and nations have are

very important for Latin American countries, so that the latter can evaluate and adapt mechanisms of use appropriate to their local context. This includes the aim of promoting cultural exchange and experimenting with various forms of dialogue and cooperation among groups interested in or affected by educational problems. In this sense, the carrying out of conferences such as the one referred to in this report, takes on special interest inasmuch as they also serve for sharing experiences of inter and intra-regional exchanges among producers, disseminators and users of information on education.

This chapter, along with analyzing the difficulties and challenges presented by the use of information in education, also reviews some successful experiences in this field which can serve as encouragement for continuing to seek out forms of cooperation among various social groups interested in improving national education in Latin American countries.

Without a doubt, one of the greatest challenges for REDUC is the commercialization of the use of the products and services that it offers. Given the Latin American context in which it operates -characterized by low incomes for professionals and educators, together with meagre and decreasing educational budgets per capita- it is extraordinarily difficult to self-finance the services offered by this information network. In fact, networks related to industry and production are paid, but even in industrialized countries the educational information networks are heavily subsidized. However, given the extraordinary increase in the number and types of REDUC users, it is possible to imagine partial self-financing. This presents the problem, among others, of fixing prices for intangible services that are not commercializable on any market (39).

The use of the information coming out of education research in the process of decision-making around educational policies and programs to be implemented, presents perhaps the greatest challenge, since the inter-connections that make this relationship possible are extremely complex. Such relationships refer to very distinct professional roles, such as those of the scientist and those of the politician.

4.1. Structural Characteristics of Education Research

Beginning with the tremendous amount of documentation accumulated by REDUC, it is clear that the primary concern of education researchers is not necessarily to feed the decision-making processes aimed at improving Latin American education. Probably an exception to this statement is the directly-applicable research that is carried out by certain civil servants in ministries of education, with the aim of establishing minimal diagnoses that illustrate decisions which must be made at higher administrative levels. However, it appears that this situation is typical not only of Latin America (40).

In a meeting held by UNESCO in 1980, some models were presented with respect to the form in which

education research and practises can be related. Firstly, it was recognized that the results of education research can be integrated into educational practise when both converge, or are at least compatible, with the options and values that frame educational policy at any specific moment in time.

Secondly, it was pointed out that in spite of the differences between the research community and political decision-makers, it is necessary to take into consideration that these compliment each other in the attention given to the current and future needs of the population. In this sense, it is worth distinguishing between needs of an intermediate and immediate type, since each requires that distinct types of research be carried out.

Thirdly, the response that research provides to the need for information on education, must consider an adequate balance between individual and social demands of education. In particular, it was indicated in this previously-mentioned meeting, that sometimes rapid technological change brings society to demand changes in educational content and methods that children, young people and adults are not in a condition to integrate.

Finally, to the extent that researchers and decision-makers have differing roles, belong to distinct communities and define their objectives relatively autonomously of each other, one has to accept that there is no immediate relationship between research and decisions in education. But it is necessary to demand that a conscious effort be made so that such a relationship can be produced. The study of the interests and motivations of both groups is part of the task that can lead to a better use of the resources that both have at their disposal.

Demo has pointed out (41) that there exist situations in which a greater or lesser relationship between education research and practice is produced, according to the situation in which the relationship presents itself: (a) when the decision-maker identifies a problem or situation that requires a solution, and requests background from the researcher in order to make a decision; (b) when the application of a model of knowledge assumes a focus or relationship between research, development and dissemination, that allows for a link between the former and educational practise; (c) the relationship is less likely when one adopts the supposition that research always contributes to improving life conditions, even when it has no immediate use; and (d) the cases in which a genuine social interaction is produced, where the social actors negotiate what best meets their interests and research becomes one more element in that process of negotiation. In any of these situations, however, there can be individuals or groups that utilize scientific information illegitimately in order to maintain their own interests.

There exists a group of epistemological, structural, organizational and political-functional factors that inhibit the use and application of research in educational practise. In the first place, the lack of multi-

disciplinary focuses impedes the integral study of educational problems, together with offering solutions that do not take into account the numerous factors at play. The scarce predictive power of the scientific models linked to the social sciences and education, together with the constant confrontation of divergent focuses and the supposedly variant social roles of researchers, administrators and politicians, makes dialogue among these groups difficult.

Secondly, the urgency of the problems confronting Latin American education, the crisis of expectations arising out of that, and even the specialized language itself utilized by researchers and decision-makers, create situations in which there is no interaction among professionals presumably concerned about the same problems.

Thirdly, Latin American countries do not possess mechanisms for establishing national education research priorities and plans for scientific research aimed at accumulating information to resolve specific problems or to establish educational policy. The general trend is the dispersion of efforts, squalid financing, lack of continuity in research programs, administrative and organizational weakness of the sponsoring institutions -together with a lack of space for interaction between the scientific and decision-making communities- all of which makes communication between both groups extremely scarce and difficult.

Fourthly, the political styles that have dominated in Latin America do not necessarily correspond to the tradition of democratic societies in which the scientific community has gained the respect of public opinion, and where in fact, its opinion has been continually requested with respect to the most diverse problems confronting society. While it is true that the results of scientific research can be manipulated by administrators and politicians for their own benefit, these anomalies can be corrected to the degree that the scientific community has greater public recognition and fights for a broad system of public freedoms. The fact is that researchers, administrators and politicians form distinct communities with different concepts about the changes that need to be introduced in education. It therefore requires bringing the positions of each group closer, by means of a greater interaction, that demands being explicit about the suppositions of each particular proposal.

Finally, efforts in the use and application of education research cannot ignore the fact that, the majority of the time, researchers are concerned about the theoretical advances of the sciences and recognition of their peers, more than in providing the solution to determined local problems. Administrators, however, appear to be more interested in preserving than in changing the existing administrative systems; and politicians are more attentive to political pressures than to difficulties confronting educational practises. This shapes the panorama that, in both Latin America and other regions of the world, makes the use and application of research a great challenge to be systematically confronted via the technical-methodological

means appropriate to local groups and situations. Part of the challenge is, then, around how to organize the conversations of various social actors, who are directly or indirectly involved in the decisions about and quality of education.

4.2. Experiences of REDUC in the Use of Education Information

Before commenting on a series of experiences of successful use of education information in decision-making at various levels of Latin American education, it is worth outlining the products and services that REDUC offers as a support to the dissemination of the results of scientific research in the area of education.

In effect, in 18 Latin American countries, the United States and Canada, there exist 27 centres associated with REDUC whose representatives meet at least every two years to coordinate, plan and evaluate their programs as an information network.

Up to the present time, a monthly bulletin called "REDUC News" (Noticias REDUC) is edited, in which the most important information on events, products and services of the network is shared. There currently exists a computerized data base with almost 10,000 analytical summaries available on Dayflo and Micro/Isis; and in the documentary bank there are approximately 18,000 documents available.

Since 1979, some 4,000 documents have been put on microfiche. An average of 50 copies of each are sent at cost to those who request them.

Five volumes of General Indices of Analytical Summaries on Education have been edited, which allows for the bibliographical search for information on a Latin American scale. Such indices include, in an integrated way, summary references produced by all of the associated centres and by the coordinating centre.

At the disposal of users from various countries are 45 volumes of Bibliographies of Documents on Education, edited by various countries on diverse educational themes. And there are 34 volumes of Bibliographies of Press Clippings on educational themes published in countries of the region.

Periodically, the associated centres carry out various analyses of information available on fundamental educational themes. It is in this way that REDUC has produced more than 80 national and regional studies based on information gathered by the centres associated with the network.

One of the most useful products offered by the network is the so-called states of the art, or states of

current knowledge on a particular theme or problem in education, which can be built upon national or regional information. To date, 24 states of the art, both national and regional, have been developed.

One method for disseminating the use of the information available are the conferences organized by REDUC for analyzing the results of such states of the art or for examining the state of national research.

With the aim of facilitating the use of information on education, REDUC had trained some 9,000 persons up to mid-1989 in the use and application of the RAE's and other products offered by the network. These people are in their majority professors and students of education, researchers, administrators, and teachers and directors of various educational institutions. With the aim of promoting use, the REDUC-associated centres are continually giving talks and offering their services in regional and national conferences and meetings on education.

As well, REDUC has lent assistance to UNESCO, the OAS, SEAMEO, the World Bank and multiple regional and international organisms, by way of the production of reports, documents and books based on the information gathered by REDUC.

During the Conference referred to in this report, the general coordinator of REDUC, Luis Brahm, stated that the network "justifies itself if it is at the service of contributing (within its area of competence) to resolving the great problems in Latin American education. The levels of poverty on our continent and reduced public expenditure in education are associated, in some countries, with difficulties in access to and permanency in the educational system. In other countries of the region, where there is good coverage, the great current challenge is the quality of education and its pertinence; in other words, if what we teach in our schools serves a life-purpose and allows for the insertion of young people into a labour market constantly changing and each day more determined by technology" (42). In order to keep-up with social and technological change, the countries of the region need research services and the dissemination of its results among relevant social actors, which has constituted one of the principal commitments of REDUC.

Put forward in this way, the role of REDUC in Latin America could sound somewhat ambitious if one considers its material limitations and the challenges presented by use and application by relevant social actors, and on the other hand achieving greater relevance of that use and application. Among the limitations around use, are the scarce availability of REDUC products and services in ministries of education and public libraries; access to and understanding of its language which is currently limited to those from the academic world; and the existence of a certain anti-intellectual ideology in terms of potential users. In the document referred to above, Luis Brahm put forward that "there still exists a very great distance between the advances achieved by the elite producers of knowledge and those who educate or are a part of educational administration".

Among the successful experiences in use and/or application of information -coming out of research- to educational problems, it is possible to highlight the following cases.

In CIEP (Uruguay), there has been an advance in the translation of research results from a language of specialists to one more comprehensible by grassroots educators. With that, educators themselves discovered aspects of the educational process that were unknown to them, they improved their understanding and knowledge of research processes, and they became interested enough to begin to carry out their own research in their area of work.

CEDIE (Dominican Republic), has participated in the organization of seminars/workshops with the Dominican Teachers' Association and the Secretariat of Education itself, providing information accumulated and systematized around problems in Dominican education. As a result of activities disseminating information, sponsored by CEDIE, the Secretariat of Education has requested that they take charge of activities of formation and professional development of teachers which should be oriented at the proposal of a new highschool curriculum. As well, in order to bring all of this to the public view, CEDIE has carried out seminars especially directed at politicians involved in decision-making around education.

The Carlos Chagas Foundation of Sao Paulo, Brazil, has directed REDUC products and services at universities of the State of Sao Paulo via researchers from the Foundation itself. The result has been that post-graduate students learn to elaborate analytical summaries on the theme of education and, therefore, to make better use of these summaries.

CINDEG (Guatemala) has organized an educational promotion commission with members of various media interested in education in that country. This commission has carried out national gatherings of researchers in order to make known both the need for information as well as what is already available for use.

In the Catholic University of Córdoba, Argentina, professor Miguel Petty has in the last four years been carrying out an annual meeting of researchers in education, structured on the basis of: a vision of the current state of education research in Argentina, a presentation of works on research projects in progress, and an in-depth analysis of some of the principal problems. The use of REDUC products is integrated within the curriculum itself of students of educational administration at the Catholic University in the following way: in the first year, the students carry out a brief analysis of the information; in the second year, they are trained in the production of RAE's; in the third year, they carry out documentary research on the basis of REDUC documentation; and, in the fourth year, they prepare a thesis that combines this basis with on-site observations.

In CPES (Paraguay), they recently organized a national gathering of educators that had a great socio-political impact, as it was able to influence the government to finally include the education sector among its priorities along with the problem of agrarian reform. In order to keep politicians interested in education matters, CPES has organized a mixed commission of parliamentarians and researchers. The director of CPES has himself been invited to speak before Parliament about the results of education research with respect to problems of bilingualism, rural education and other themes that are today a priority in this country.

CIPES (Buenos Aires, Argentina) has carried out a compilation of journalistic information on the educational conflict experienced in this country in 1988. This allowed for the dissemination of material -properly edited- among the union locals in Buenos Aires, serving at the same time as base material for analyses and discussions of educators around the characteristics and consequences of that labour conflict.

CIUP (Bogotá, Colombia) has edited a series of "Seminar Notebooks" that gather together RAE's from seminars carried out in this country, as well as reflections on themes and polemics in the area of national education. This documentation serves as a basis for creating spaces for reflection among education researchers, with the aim of moving its production closer to the options available in controversial themes around education.

Also in Colombia, Bernardo Toro has been using the information available in REDUC to prepare educational programs for television, with the sponsorship of the Social Foundation, as a way of closing the gap between production, dissemination and use of scientific information.

During the Conference, UNESCO and World Bank expert Ernesto Shiefelbein pointed out that, in his opinion, there exists a growing use of REDUC's documentary base in the research and formulation of educational policies. The success achieved by some early users of REDUC material -in the sense of producing interesting research for decision-makers and the increase of its professional prestige by having reached high-level public positions-has meant that REDUC has been able to attract a growing number of users. Currently, it is possible to classify users in the following four categories: (a) educational planners and staff of international agencies in charge of designing alternatives for decision-making, or who attempt to help teachers alter the way in which they view educational problems; (b) decision-makers who attempt to increase the bases of their empirical and theoretical knowledge, around how to establish new policies and a distribution of resources according to those policies; (c) students of higher education that are preparing theses or oral exams, and researchers that are preparing proposals for research; (d) civil servants that attempt to fill the vacuum that is often generated in the institutional memory of public organisms.

4.3. Education Information Requirements of Various Groups

There is no doubt that the educational information requirements of researchers, planners, students, teachers, journalists, administrators or parents vary considerably. This constitutes precisely an enormous challenge for REDUC, given that in order to improve the quality, efficiency and effectiveness of education, it must attempt to influence each of these social groups. We will now present a series of cases in which different categories of users have requested information from REDUC for specific needs as indicated.

Firstly, REDUC's documentary base has been used in the elaboration of sector diagnoses of education in Latin American countries, and the preparation of projects for the improvement of some of the sub-sectors of education. Planners as well as civil servants that prepare projects for financing by international agencies need to be aware of evaluations of experiences or pilot projects, with the objective of verifying what variables it is possible to alter in order to improve scholastic output, such as descriptive reports on the structure and functions of educational systems. In effect, information available in REDUC-associated centres in Guatemala, Venezuela and Colombia has been used to prepare projects aimed at securing financing to improve national education. In the latter country, they have also experimented with a project of change planned for the schools of Risaralda; and in the case of Bolivia, they have used information to analyze the characteristics and problems of national education.

In 1984, CINDEG was contracted by Harvard University to prepare a project for the improvement of education, to be presented to AID (Agency for International Development). For this purpose, CINDEG identified some 300 references related to the problems examined. Later, in 1987, the World Bank used that information to prepare a project that meant the financing of $ 50 million US in Guatemala for improvement of its educational system.

In 1986, CIUP selected 200 reports on technical education and professional formation in Colombia, and produced 130 summaries of its problems and alternatives for solution. This information was used in 1989 by a World Bank team responsible for preparing a project for a loan of $ 200 million US requested for improvement of their educational system. It allowed for the identification of the principal national specialists in the field, and to interview them in order to refine the analysis and achieve a high degree of consensus around which are the best options for action in this area.

Secondly, it is worth noting that decision-makers are interested in brief, precise and direct reports that review the specialized literature available around specific problems and that make note of their principal elements, relationships, experiments and evaluations carried out, and that formulate recommendations with respect to urgent problems in education. Access to information on comparative research has allowed for the preparation of states of the art on a dozen educational themes, such as bilingual education, rural

education, higher education, scholastic efficiency, technical education and educational financing. These reports have changed the way in which some educational policy decision-makers think about those problems. Some of them have had the earlier occasion of preparing RAE's or of participating in national meetings of researchers sponsored by REDUC, which has allowed them to value and evaluate the information contributed. For example, a former minister of education from Mexico requested a known educator from his country to daily submit a one-page summary of the research reports relevant to the problems around which he had to make some decision.

José Bernardo Toro led the selection of RAE's for suggesting new measures that could considerably improve the efficiency of some 10,000 public schools in Colombia. Later, a private business financed the preparation of posters distributed throughout the country, and the follow-up of changes occurring in public awareness around feasible solutions to be put into effect.

In general, the preparation of states of knowledge sponsored by international agencies -previously mentioned- has allowed for the promotion of a discussion among decision-makers concerned about problems of educational financing, of how to transfer part of its cost to university students, how to reduce the high levels of repetition that have been observed, how to adjust the teachers'workload, and of the importance of each student having the textbooks s/he requires.

Thirdly, it has become important to support the process of preparation of future teachers. Education students as well as researchers need to know what material exists on the subject around which they are interested in doing personal research. In various countries, a module an how to use REDUC information has been introduced into the university curriculum or content of specific course materials; and some post-graduate students prepare RAE's on their own themes of interest. This latter makes them aware of the potential for information recovery via that method, especially for preparing theses or oral exams required for their degree. This has been very successful at the Education University of Bogotá, the Catholic University of Córdoba and La Salle University in Mexico. But we must also highlight the case of researchers who use the documentary bank to formulate proposals and/or recommendations, given that these are an important factor in creating public opinion around the problems and options faced by national education.

Fourthly, there exists the problem of lack of continuity of the teams responsible for the management of public education systems in the various countries, which generates gaps in the knowledge that they have about experiences, reforms and measures taken in the past, in order to confront current problems. REDUC is probably the only possibility for recovering part of the institutional memory, by making available the main non-confidential reports on education, given that in many cases an outgoing government team takes with it the principal information related to its period in office. Nevertheless, even these public

servants resist sharing with the particular national centre associated with REDUC, the reports that they produce during their mandate; and it is necessary to continue working so that this information is available for public use. Currently, the documentary bank receives only a fraction of the reports produced in the government sphere.

REDUC is presently cooperating with the national networks created by the "Principal Project" of UNESCO in the region, that is: PICPEMCE in the area of curriculum development and teacher training; REDALF in literacy and adult education; REDPLAD in educational planning. The objective of these consists in relating to decision-makers, the information relevant to the types of problems they confront. As well, they are using the available information to nourish analyses and discussions at conferences or regional meetings on education, beginning with the selection of RAE's relevant to the conference/meeting objectives.

It is still necessary to create national networks on other priority themes in national education, such as: school infrastructure, continuing education, technical-professional teaching, production of school texts, evaluation of scholastic output, and educational innovations.

Finally, it is worth pointing out that a single research report can be used from various angles by persons concerned about diverse problems in education. For example, a report on the nutritional status of primary school children can be used to improve these children's health, to design curriculum, to improve the quality of education, or in other ways, so that the treatment of that information--cross-referenced--has enormous potential (43).

4.4. Present and Future Challenges

The challenges that REDUC faces in the near and mid-future can be grouped according to methodological questions, orientation of the system, and evolution of its context. This automatically generates a matrix of six situations, by multiplying the levels of options by the transitory situation in which they present themselves.

The data which the coordinating centre of the networks has at its disposal indicated that REDUC products and services are primarily utilized by university students and researchers in education. On a lesser scale, it is utilized by persons linked to decision-making in public administration, as well as teachers and documentalists; and in some cases by journalists.

Therefore, one of the principal challenges is to relate REDUC to educational policy, to decision-making, to the relevant conversations about education in each country. The information should "illuminate"

conversations among persons related to the decision-making process, providing relevant data, promoting ideas, informing about options.

For that reason, the REDUC coordinating team is proposing the carrying out of a series of projects, one of which consists of promoting the use of REDUC via the installation of documentary data bases in some key university institutions in each country, together with providing training in its use for researchers, professors and university students.

As well, REDUC is promoting the formation of networks of institutions in each country in order to begin forming a community of flow and exchange of information. With respect to this, there will be a study done in order to determine the demand for installation of these data bases, as well as resolving the training aspect.

Another of the actions planned by REDUC consists of disseminating the main ideas of the network within the public administration systems of each country. This will be done via training campaigns in the use and development of new products, and technification of the processes of access to the information.

It is also planned to promote relationships between private and public entities of production of knowledge around education, in such a way as to benefit the decision-making process in public administration.

The diversity of information requirements of different categories of users also constitutes an enormous challenge for REDUC, insofar as it is not enough to provide isolated data that only researchers can integrate into a coherent interpretive framework. But it is also necessary to prepare, for example, reports, monographs or technical memoranda directly useful to the information needs of each group of users.

Finally, in order to confront the challenge represented by the commercialization of REDUC products and services, we are planning to carry out a marketing study for implementing a sales program and generating more income for REDUC itself (44).

The relationship between researchers and decision-makers is a "difficult relationship to establish in practise", Bernardo Toro has pointed out, above all when one perceives information as "the grouping of elements that allow for making adequate decisions around specific problems in education" (45).

With respect to that, Gonzalo Gutiérrez has pointed out that "it is essential that the user establish a relationship between a grouping of elements or data and the problem" (46). In that way, having accumulated a considerable mass of data, REDUC now has the challenge of aiding users in converting that

data into information that is useful and relevant to their problems.

This latter author has summarized the practical difficulties in use of information, into four categories: difficulties coming out of the distinct nature of the action of researcher and that of decision-maker (many times with visible political consequences); difficulties that arise from the prevalence of an oral over a written culture in our region ; difficulties that arise from the nature of educational problems and the characteristics of education sciences; and, difficulties coming out of the nature of the type of information that is currently available, which is better adapted to the needs of researchers than those of decision-makers.

It is worth indicating that throughout the 1980's, there have been efforts made to relate research and educational practises, as demonstrated by the attached bibliography. This is true in the sense that one must recognize that in this area progress is slow, and must maintain a strategy of continuity and persistence if one wishes to take better advantage of the scarce resources dedicated to education research in the region (47).

Notes from Chapter IV:

39) See Corvalán, O. and R. Gillet; op.cit.

40) UNESCO - European Centre for Higher Education. Research and Practise in Education: How to Strenghten Links Between Research and Practise in Order to Improve General Education. Bucharest, Rumania. 1980.

41) Demo, Pedro; Pesquisa Educacional na America Latina e no Caribe: Tentativa de Sintese e de Discusao Crítica. ("Education Research in Latin America and the Caribbean: Tentative Systhesis and Critical Discussion"). Brazilia. IPLAN/IPEA. July, 1987; p.110.

42) Brahm, Luis; Speech given at the meeting of directors of associated centres, held in Guadalupe and Badajoz, Spain. October, 1989.

43) In the preparation of this synthesis, Ernesto Schiefelbein used the following references:

- Fitzgerald, H.; Holsinger, D.; Evaluation of the REDUC System: Report to USAID. Cecchi and Co.; Washington D.C. 1986.
- Schiefelbein, E.; "Education Costs and Financing Policies in Latin America", in Educational Planning in the Context of Current Development Problems. IIEP. Paris. 1985, p.339-370.
- Schiefelbein, E.; "Educational Planning in Latin America", in International Encyclopedia of Education.
  Pwegfamon Press. Oxford, UK. 1985, p.3933-3936.
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  31. 1982; p.4-7.
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- Schiefelbein, E.; "Research, Policy and Practise: The Case of Chile", in International Review of Education, N°27. 1981.

44) Martner, Marisol; Marketing e Información: Un Intento de Aplicación ("Marketing and Information: An Attempt at Application") and Formulación del Departamento de Ventas de REDUC: Posicionamiento de la Organización frente a sus Usuarios ("Forming of the REDUC Sales Dept.: Position of the Organization Towards its Users"). Santiago, Chile. REDUC. 1990.

45) Toro, J.B.; La Información y el Mejoramiento Cualitativo de la Educación ("Information and Qualitative Improvement of Education"). Bogota. CIID. 1981.

46) Gutiérrez, G.; Investigación y Toma de Decisiones en Educación en América Latina y el Caribe ("Research and Decision-Making in Education in Latin America and the Caribbean"). Santiago, Chile. CIDE-REDUC. 1987.

47) Op.cit, p.67.

Chapter V

COMPUTERIZATION OF EDUCATIONAL DATA BASES AND THE EUROPEAN/IBERO-AMERICAN INTER-CONNECTION

Given the existence of more than 18,000 RAE's corresponding to regional and national summaries, and the need to rapidly transmit data, reports, documents and information among the 27 centres associated with REDUC, computerization of REDUC's documentary base is indispensable. This includes the building of a fluid communications' system that allows for the efficient operation of the network and placing the information at its users' disposal in a timely fashion.

In this section we will examine the experience of REDUC and other networks in the area of use of informatics for the processing, storage and recovery of information on education research. In particular, the conference enjoyed the participation of representatives of Spanish and European networks, and UNESCO, which have computerized their services and are experimenting with communications' systems that are more efficient than traditional ones (mail and telephone).

During the Conference in Badajoz, the problem of information was approached via an analysis of the experience of various European networks, of REDUC and of emerging networks in Asia and Africa. During the working session dedicated to this theme, it was established that there exists a lack of inter-network communications, a lack common of protocols and formats for communication throughout Ibero-America, North America, Europe and other regions of the world; as well as the lack of transporters to take messages from one country to another, which is due to the need to subsidize the dissemination of scientific research in this stage of its development. The development of electronic communications' networks will provide us with the enormous potential for harnessing joint research carried out among researchers of various countries, and the potential for disseminating their results via the distribution of periodic analyses of the state of education in those countries, among other things.

The incorporation of informatics as a tool that gives potential to communication and allows for new possibilities of interaction, independent of the distance between those in dialogue, is both a promise and a challenge for the paper and plastic network that REDUC has been until now.

New technologies in communication supported by informatics allow us to drastically multiply internal and external productivity of information systems such as REDUC, along with providing a more efficient service to its users. Internally, the network will have the possibility of more rapidly processing the data and qualitative information on regional and national education. But it could also increase its efficiency by increasing the possibilities of use of the accumulated information, integrating new categories of users, providing timely information to various groups of decision-makers, retrofeeding available information, and allowing for the creation of spaces for conversation among social actors via personal or long-distance interaction.

5.1. Background on Computerization of a Network

In the history of the need for information we can distinguish three periods that are related to the availability of technological means for the storage, processing and dissemination of information. In the first period, the principal mechanism is the exchange of ideas and experiences among the scientists themselves who cultivate a similar discipline, via conferences and specialized publications. At the conclusion of this stage, the proliferation of information translates into the appearance of magazines, summaries and other instruments of bibliographical information. In the second period, there appear information services for industry, automized information and services for the selective dissemination of information. Finally, in the third period, there appear the so-called "on-line" and teledocumentation services (48).

It has been repeatedly stated that the existence of a grouping of disperse and disorganized data does not constitute information. For that, it is necessary to organize the data, present it in an intelligible form, interpret it and confer upon it a significance in terms of human conventions or theories built upon scientific suppositions. For ISOVOCAB*, information is "the significance that man gives the data via the application of conventions". But from the informatics' point of view, information is a structured gathering of Bits or binary digits, which constitute the microscopic unit into which it is possible to reduce the data.

In order to manipulate data, a computer works with very simple elements. The existence or nonexistence of a subtle level of energy in one point will be its elemental data. The Bit is an element that can have values of zero or one. Conventionally, if there is that subtle level of energy, one will understand that there is a "one" value of information. The non-existence of that subtle level of energy will allow the computer

* **ISOVOCAB:** Terminology proposed by the International Standards Organization.

to understand that there is a "zero" value of information. Starting with the Bit, via combinations with other Bits, one can obtain more complex levels of information. For example, one can symbolize the digits or sums from zero to nine, and obtain digital numbers, letters or strokes of various types that form the alphabet and punctuation (49).

Beginning with the combination of Bits one starts to build information systems in organizations dedicated to scientific research or other types of organizations. Such a system can be centralized or decentralized according to the needs of the organization. In the case of networks that have members inside and outside the respective country, who may be many kilometres from each other, computer technology is an attractive option. The appearance of micro-computers has had great acceptance among actors in information networks for various reasons that Andrés Claro summarizes as follows: first, it offers a stand-alone capability where each interested party or user builds and makes use of its particular applications; second, it produces less resistance to the introduction of computerization in these organizations; third, it allows for linkages via communications; and fourth, it facilitates the standardization of systems, products and information.

It is likely that the total cost of micro-computerization will be relatively greater than centralized systems, but micro-computers are continually decreasing in price, the potential for use increases and therefore the overall costs are bearable. Moreover, they offer great versatility and a continuous increase in their capacity to accumulate and process data.

As a result of the incorporation of micro-computerization, organizations such as networks must confront an additional expense: adapting and training their personnel, taking into consideration possible expansion of their equipment, and deciding upon a system of codes, formats and protocols that can be compatible or not with the systems adopted by other organizations or information networks. Therefore, it is important that the system be adaptable to changing needs and that the information generated be transportable from one system to another.

In the case of organizations dedicated to the storage and recovery of information, such as libraries and documentation centres, micro-computerization can help in the following activities: acquisitions, cataloguing, registry, consultations, circulation and control of users, providers and other relevant groups.

The essential thing to keep in mind in the computerization of an information system is to give priority to the fact that data processing needs vary according to the type of user, given that the problems which distinct categories of users confront are different. From there, exists the need to organize the computerization of data in such a way that it can be manipulated by examining it from various angles.

In REDUC's case, data base computerization must take into account that the network represents a scientific inter-communication system that gathers the results of education research in order to make it known by diverse categories of users. Therefore, computerization must serve to make more accessible the research works, the innovation experiences and the data on the state of national education.

During the Badajoz Conference, the representative of the Carlos Chagas Foundation of Brazil, Rubens Murillo, made known the need to establish parameters for making the national networks compatible with REDUC, together with making the software programs instruments of action based on the data. That is, not only should they be able to process, store and recover RAE's; but also that they be able to cross-reference information in order to obtain different types of reports, directories, executive summaries and other instruments useful in action-taking.

5.2. Computerization of the REDUC Data Base

The computer era has demanded that REDUC-associated centres equip themselves technically in order to be at the forefront of the information-providing process. The basic technical equipment has consisted of the acquisition of an IBM-compatible micro-computer and printer. However, according to a report by Horacio Walker, the technological situation of the centres is very heterogenous. There exists a disparity in the availability of resources themselves, both financial and human, in confronting the technical problems demanded by the implementation of computer programs.

In the area of software, REDUC's coordinating team has been using the Dayflo program, but it is currently in the process of incorporating the Micro/Isis program as an alternative, given its international use and demand. It is completing the process of converting the records from Dayflo to Micro/Isis. For now, the centres can use one or the other of these programs. Therefore, it is necessary to consolidate the process of national and regional data base computerization, to progressively make more adequate the computer programs in order to facilitate the search for information, to experiment with new technologies or more efficient program applications, to plan for the progressive growth of the system, and to experiment with technologies that allow for the easy and rapid exchange of information among the centres.

In the area of communications among the associated centres, it is necessary to develop an electronic network that connects these, with the aim of making coordination more effective and timely, and exploring new services that can be offered to users. Currently fewer than one-half of the centres have a modem for communicating with each other, and it is necessary to resolve a series of technical problems in order to be able to be connected via satellite. There is also access to two electronic communication programs, the Coordinator and the Parti. The former serves for communicating with CEE of Mexico, and the latter with OISE in Canada and CEDIE in the Dominican Republic. For now these are only used for sending

messages and not as a means of transmitting data.

In this field it is necessary to evaluate the communication programs in relation to fax and telephone alternatives, given that the mails present growing deficiencies in the region. The possibility of carrying out conference calls, of facilitating collective learning, long-distance courses, continuing education and in general taking advantage of disperse resources in the associated centres of the region, will all depend on the use one decides to make of telematics.

During the Conference, an interesting exchange of opinions on data base computerization and the application of telematics took place, making clear that both systems should help to shorten the distance in access and use of information on the part of the middle and lower social sectors, given that one already observes a growing marginalization in Latin America in terms of access to information according to social strata.

Patrick Scott of the University of New Mexico spoke about experience with the ERIC system in the U.S., which began with paper RAE's and microfiche documents. While that meant a certain delay in the receiving of information, it had lower costs. Currently the on-line system is being used at a cost of $ 45.00 US per twenty bibliographical notes. But it is also storing and distributing the information on compact discs (CD-ROM), which has a cost of $ 5,000 US per data base copy. Given their high per- unit-cost, libraries can only acquire one of them which delays simultaneous access by various users. Therefore, libraries continue purchasing paper summaries and microfiche documents.

Joseph Farrell of the University of Toronto pointed out that the electronic networks serve for conversations among more people, with a better quality of dialogue and at any time. These are used extensively in Canada instead of the mails or calling meetings, which take more time and are more costly. However, he also pointed out that in order to facilitate conversations, the ecology of the office must change so that telematics and computerization also have consequences upon the infrastructure of academic and scientific dissemination centres. In order to facilitate communications among REDUC members, Dr. Farrell offered the possibility of inter-connecting them via the Parti and the BITNET system which is available at OISE, as an associated centre in Canada.

Roque Ramos of the Honduras Teacher Training College, spoke of the need to evaluate the experiences of each associated centre in the area of use of computer programs, with the aim of defining priorities and directions for the entire Latin American network; and establishing a strategy for achieving the objective of computerization at the service of its users. He also pointed out the need for a centre that will experiment first with these new technologies, in order to later transfer the more valid experiences to other centres associated with the network. In the case of telematics, Professor Ramos indicated the need for

evaluating the costs and benefits of existing communications media.

Domingo Merlino, systems analyst with CIPES in Argentina, maintained that data bases vary according to the degree of application of computerization. Moreover, he maintained that in computer applications, one observes variations in the degree of interaction among designers, operators and users of the system, a situation that could be negative. The application of telematics, however, relates more to the efficiency of infrastructure of certain public services (such as telephone lines). Finally, he emphasized the need to adequately train the people in charge of the operation of computerized data bases, of those responsible for maintaining the equipment and software, as well as the need for coming to an agreement around ownership, format, conventions and norms, numbering, and coding, in order to facilitate data transfer. Given the current state of knowledge around new technologies in the treatment of data, he advocated maintaining various types of technologies simultaneously in order to evaluate their results.

5.3. Support To National Networks

The existence of data bases that support national information networks, beginning with REDUC-associated centres in each country, offers the possibility of developing a grouping of structured and coherent actions directed at disseminating and facilitating access to and use of computerized information. This includes administrators at various levels of the educational system, as well as planners, researchers and university professors that normally use this type of information.

Currently there exist the beginnings of a national network in Colombia, Brazil and the Dominican Republic and a new network in Mexico. Various countries have access to the electronic network in the United States, ERIC; however, no country in the region has on-line services for recovering information available in REDUC.

Among REDUC's plans are to form national networks with the aim of implementing contexts for conversations among academics, administrators and politicians nationally and regionally, with the aim of generating a set of projects and proposals relevant to the educational problems they confront. Such networks would disseminate information useful to the generating of proposals, they would provide incentive for the utilization of micro-computers and inter-connection with the electronic networks, and they would support the process of data transmission to and from these countries.

During the biannual meeting of REDUC centres in Caracas, Venezuela in October of 1989, (50) advances in this project were presented. All of the panellists highlighted the importance of constituting networks that encompass the countries in their totality, together with distinguishing national peculiarities that make the building of these distinct in each country. For example, in Uruguay, the network has been

founded and developed out of the requirements of professors interested in doing research; in Bolivia, it has been formed around the needs for better coordination and integration of CEBIAE itself; in Brazil as an expression of the functions of a government organism (INEP) that fulfils functions of support of educational policies at a national level; and in Mexico, it has been formed as the result of the initiative of a promotion group led by CEE, and in which participate various universities and government organizations.

5.4. The Challenge of Integration of the Regional Networks

During the Conference we had the opportunity to hear presentations given by representatives of European education and scientific information networks. In particular, ICE of the University of Extremadura presented the REDINET Project, which has a high technological level and functions as a local network in Spain. They created access to the data bases of the Ministry of Education and Science in Madrid, beginning in Badajoz, as well as searches carried out on the REDINET data base itself.

Participants also had the opportunity to hear a detailed presentation on the activities of the FUINCA Foundation of Spain, which carries out intensive technological activity in the area of scientific data bases.

The Latin Union presented a project for a data transporter network among Latin countries, which will function via branches in the Dominican Republic and in Paris. This will offer the possibility of transporting data at a subsidized cost, and it could be used as an electronic communications' network by the centres which request it.

The representative of UNESCO's central branch in Paris, Sonia Cajarville, made a detailed presentation on the information network that this international organization promotes in the various regions. During the discussion, the need to move towards the integration of the regional networks, with the support of UNESCO, was put forward.

For REDUC, the challenge that the new information technology --derived from informatics and telematics-- presents, consists of integrating these into their system in such a way that it produces a qualitative leap in the use of accumulated information, but without paralysing or diminishing the rhythm of achievements that have been produced by the paper and plastic (microfiche) network up to the present time. The challenge primarily consists of relating the systematized information (now with computer support) to the central problems in Latin American education. In other words, we must try to organize and to facilitate conversations around the knowledge accumulated by various actors in the area of education.

In particular, teledocumentation presents the possibility of shortening the distances between the places of production and those that utilize the information, be that via instantaneous or deferred communication. In a continent with so many geographical "accidents" and difficulties in transport and communication, the possibility of being able to count on an electronic data transmission network represents a tool of enormous productive potential. At the same time, it represents a means of relating the cultures of the people who inhabit Latin America with those of other regions of the world.

As well, the introduction of informatics presents the possibility of providing potential to the actions of REDUC, and makes possible their evaluation more in terms of an increase in actions aimed at improvement in the quality of education, than in terms of quantity of paper accumulated in libraries. At the same time, informatics' applications facilitate analysis of the quality of research production on the part of like-groups of specialists in the various fields of education research. Electronic recovery of information facilitates, moreover, the prior evaluation of advantages and difficulties of proposals for educational reform and innovations, allowing for considerable savings of already scarce resources. Finally, the availability of information at a societal level also allows those responsible for decision-making to be duly informed. Therefore, the challenge for REDUC consists of incorporating informatics as a support to new conversations that will be organized among educational actors, thereby improving the effectiveness of that communication.

Apart from the utilization of the electronic network for the purpose of servicing its users --which is the main objective-- it is possible to utilize the network for the purpose of technical-administrative coordination of the network itself, creating relationships among national assistance committees, preparing coordinating meetings and visits among the various centres, sending the news bulletin and trimester reports of activities and finances, and other data that is required for a more efficient management of the network.

Specifically, informatics' applications in REDUC will go through a process that will take some years, and this implies:

a) the design of training materials for regional staff responsible for educational management, and its prior validation;
b) the elaboration of executive summaries with the support of computerized systems;
c) the equipping of software and connection facilities for high level planners and administrators;
d) the carrying out of teleconferences classified according to type of user;
e) the developing of new products in the magnetic medium and placing the computerized data base at the disposal of universities and ministries of education;
f) The developing of modules of computerized consultation of REDUC's data base; and,
g) the establishing of connections with education information networks in North America, Europe and other regions.

Notes From Chapter V:

48) FUNDESCO; Los Medios de Información en la Década de los Ochenta ("Information Medium in the 1980's"). Madrid. Editorial Tecnos. 1983.

49) Claro Hunneus, A.; El Impacto de las Nuevas Tecnologías en las Bibliotecas, Centros de Documentación, Bibliotecarios y Documentalistas ("The Impact of New Technology on Libraries, Documentation Centres, Librarians and Documentalists"). Santiago, Chile. CIDE-REDUC. April, 1989.

50) Informe Final del 5° Encuentro Regional de REDUC ("Final Report of the Fifth Regional Meeting of REDUC"). Caracas. October 24-27, 1989. REDUC. March, 1990.

Chapter VI

INITIATIVES IN IBERO-AMERICAN COOPERATION

The Badajoz Conference opened with an interesting debate on the forms of Ibero-American cooperation, and the current state of cooperation between the countries of the European community and those of Latin America in general.

The Conference closed with the presentation of conclusions and recommendations of the working commissions around initiatives in cooperation, which will be presented in the second part of this chapter. The importance of inter-regionalness was emphasized, as well as the need to quickly come to operating agreements that allow for cooperation in joint projects and a fluid transmitting of data among the regions.

6.1. Presentations and Discussions Around Cooperation

The representative of the "Sociedad Estatal Quinto Centenario" of Spain, Carlos Wert, expressed that the "Quinto Centenario" is a mobilizing program of cooperation in the Ibero-American region. It is centred around technical-scientific, educational and cultural cooperation, and particularly in the area of information. It is this latter that attempts to move towards the constitution of an Ibero-American community of information.

The "Sociedad Estatal" is currently responsible for attempting to make projects viable in the field referred to above. This often makes it serve as an incubator, a supporter of seed money, so that eventually the project can grow autonomously. Therefore, the society has the mission of searching for new projects of cooperation. It also attempts to have Spanish government and international agencies provide resources for cooperation projects. The government of Spain has created, for example, a fund with the Inter-American Development Bank (IADB) in the amount of $ 500 million for launching the first actions in projects of cooperation. There also exist projects with the European Economic Community (EEC), with

the support of Spain and Portugal, to finance projects in the Ibero-American region.

Mr. Wert pointed out that they are interested in knowing about existing projects of information in education, those organizations that can carry them out, and the characteristics of the actions that they offer. He emphasized the need for programs that can exchange, standardize and process education information in the Ibero-American region, and that can serve as an interphase between Latin America and the European community. The Conference will serve to initiate the bases of a coming closer to and a joint determination of the most recommendable strategies.

During the discussion of Mr. Wert's presentation, he also pointed out that the Society that he represents is interested in financing programs that are of a multilateral and Ibero-American nature. This can be done in collaboration with other Spanish and international agencies, but it is also possible to present projects that are commercially viable with the aim of ensuring their self-support in the future.

Bernardo Toro highlighted the need to create conditions so that politicians, administrators and community leaders can use the information for decision-making. Information network projects, in his opinion, allow for the creation of conditions for the use of information, but it is necessary to move forward and make the use of information a genuine cultural act, in transforming it into a form of daily action for the decision-maker. It means moving towards the creation of a culture of information.

The representative of GTZ of West Germany stated that the Society has until now only worked on the basis of projects financed by the Ministry of Economic Cooperation in his country, which emphasizes primary education, professional formation and some university agreements. Nevertheless, they also develop research projects on the impact of projects, working methods and achievements of the projects themselves, particularly jointly with the representatives of countries in the south in a way that makes participatory planning viable and does not allow for repetition of errors. Moreover, they carry out the follow-up research for the monitoring and adjustment-making of the projects in the short-term. GTZ employs German specialists as well as nationals from the countries where their development cooperation projects are elaborated, but it has only minimal funds for joint research projects.

During the discussion, Alfonso Lizarzaburu -representative of non-governmental organizations of UNESCO- pointed out that the notion of cooperation has ethical, political, technical, economic and social dimensions, in such a way that it is necessary to adopt measures so that this cooperation fulfils the criteria established in each area. By way of illustration of activities to be developed, he indicated the need to make better use of research on the part of development agencies, of supporting South-South and North-South cooperation -this latter given the fact that the agencies have limited funds for research and should be fed by research done in the South.

Northern cooperation cannot be limited to the mere financing of projects, and it must reflect an interest in developing information systems that allow for the improvement of questions that begin with the identification of problems which require more adequate responses than the current systems provide. For that, the systematization of information is a basic condition, and the relationship among the 7,000 NGO's grouped together in UNESCO, and the government organizations, must be one of a genuine communication vessel.

Dr. Kenneth King, of the University of Edinburgh, stated that research and information are vital in development cooperation for the following reasons. First, agencies in the North are subjected to public scrutiny that obliges them to be as transparent as possible. Second, one must evaluate if the project module to which they are subjected is the only possible form of cooperation. Third, we serve a type of universalization of research via organisms like the World Bank, which has the ability to incrust the results in national policies. Fourth, the role that researchers in the North can play in their consultations to development agencies is important. These often take the form of project evaluation but -carried out with the support of researchers in the South- can result in being clearer and more fruitful. Fifth, there is interest in Europe in welcoming members from both within the European community as well as from developing regions. In the former, it would be much closer to a relationship among equals, from whose experience countries in the South would hope to benefit.

Lorenzo Guadamuz of the Costa Rican Ministry of Education, presented the problem-areas involved in cooperation when it deals with a relationship among countries of great technological, economic, social and cultural heterogeneity. Cooperation must also concern itself with political freedoms, the strengthening of peace and democracy, and not only technical-economic problems. He harshly criticized the limited effort of NGO's for not concerning themselves with the fact that 80% of Latin American students come from sectors of extreme poverty, and require a quality education that it is not possible to offer due to low education budgets that were decreased a further one-third during the 1980's. Finally, he pointed out the importance of participatory planning with cooperation agencies, proposing: to increase horizontal cooperation, projects with shared responsibilities, and the need to seek out new solutions to old problems in education.

Dr. Joseph Farrell presented the difficulties of North-South and South-North cooperation in equal-partnership research projects, beginning with the experience gained in the program of cooperation between OISE (of the University of Toronto) and two research centres in Chile, as well as another in Nicaragua.

Dr. Kenneth King stated that alternative conceptualizations are required around the problems of development and the creation of alternative discussions that mobilize cooperation. For that a certain

ripening period, and timely and effective information, are required. On this point, Monica Allman of CLACSO stated that inter-network cooperation has the potential of being able to build a cooperative relationship among equals.

Teresinha Nunes de Carraher of the University of Pernambuco, Brazil, pointed out the concern of symmetrical relationships between countries in the North and those in the South. Kenneth King had previously said that when North-South relationships become symmetrical, interest is lost and they are no longer financed. Therefore, it is important to develop in the South the capacity to analyze problems, given that European models sometimes have little to do with our reality. To use European models can allow us to obtain funding, but sometimes they are not very appropriate to local reality and vice versa (51).

6.2. Conclusions

The representative of "Quinto Centenario", co-sponsor of the Conference, was congratulated on its success, and he stated that very interesting achievements were made for the future of Ibero-American cooperation.

This perception was shared by all the participants, who agreed that, in order to make inter-regional communication effective, it is necessary to put into practise a common communication language in the field of informatics and education documentation.

The Conference concluded that the development of an information transport network, available without cost to Latin American education researchers, would be an important support to the functioning of REDUC.

Within this same view of communication, the editing of RAE's in Spanish or Portuguese (according to the official language of the producing country) was pointed out as being important for Latin America and the Iberian Peninsula. Working in a common language is already a step forward in regional conversations.

However, a greater presence on the part of REDUC national centres in meetings on education at a regional, national or international level is necessary, with the objective of providing information and harnessing leadership.

REDUC should contribute in a special way to the Bangkok Conference (and others of an international nature), contributing to the systematization of research available in the region on primary education and popular education. In these aspects, Latin America can make a significant contribution.

REDUC should also participate in the feasibility study of the REDALF network, in an experimental fashion without cost to REDUC-associated centres; and establish an exchange of information between REDUC and the Latin Union.

Finally, the following Spanish universities expressed interest in promoting REDUC and incorporating its data base:
the Faculty of Education of the University of Barcelona, via the History of Latin American Education program; the University of Comillas; and the University of Extremadura.

6.3. Recommendations

The most substantial recommendations emerging out of the Conference can be grouped into five principal areas: 1) those to do with financing and the commercialization of REDUC products; 2) those referring to the exchange and dissemination of information; 3) those referring to the use of information and policy formulation; 4) those to do with education research and knowledge-building about Latin America, both within and outside the region; and 5) those related to some concrete forms of cooperation between Spain and Latin America.

6.3.1. Recommendations on Financing and the Commercialization of REDUC Products:

a) That REDUC continue exploring ways to commercialize all of the products of all the associated centres, so as to be able to eventually create a genuine market for these.

b) That we diversify funding sources, that there be multiple channelling, and that this include the carrying out and sale of documentary research.

6.3.2. Recommendations on Exchange and Dissemination of Information:

a) Take concrete measures to begin the exchange of information among the networks of various regions, inter-network communication, dialogue among diverse specialists, etc.

b) That REDUC continue its efforts so that UNESCO actively participates in the process of inter-connection of regional networks.

c) That REDUC promote and coordinate the formation of specialized temporary sub-networks, consisting of a specific number of specialists or associated centres, with the aim of developing a project, elaborating a product and disseminating its results.

d) Adopt a common communications language among the electronic networks, in order to make rapid and unencumbered communication among them possible.

e) That REDUC make efforts to announce ahead-of-time the dates, participants and themes of meetings on education that are carried out in the region.

6.3.3. Recommendations on the Use of Information and Policy Formulation:

a) That the national centres disseminate the problem-areas dealt with at the Bangkok Conference, especially among national experts and personnel of the Ministries of Education.

b) That REDUC, in collaboration with RRAG, promote follow-up and identification of the levels of impact upon the various countries, of the agreements coming out of the Bangkok meeting, via the preparation of periodic reports.

c) Establish national networks and carry out national workshops that allow for the dissemination of research results and their consequences upon decision-making in education (52).

6.3.4. Recommendations Around Education Research and Knowledge-Building:

a) Discuss in greater depth the situation of education research in the region, with the objective of taking into account the different inter-cultural codes within and outside the region; and also to come to more clearly visualize some priority themes in education research in the region.

b) Stimulate and disseminate the use of alternative research methodologies, as opposed to orthodox ones, given that there in not sufficient knowledge about the various methodological alternatives that research of a given problem puts forward. This type of action will overflow into an improvement in the quality of the research disseminated by REDUC.

c) That REDUC sponsor sub-regional seminars where the educational problems of each sub-region are dealt with and typified.

d) Highlight research that shapes the native characteristics of knowledge-building, and be able to count on an epistemology of indigenous groups themselves (53).

e) That REDUC produce: a) listings of specialized researchers in the various fields of education; b) develop a select group of subscriber specialists so that they have a general vision of education in the

region; with the aim of increasing integration between researchers and compilers of information on the one hand, and between researchers and decision-makers on the other; as well as to promote inter-disciplinary communication and that between researchers and decision-makers.

6.3.5. Recommendations for Promoting Cooperation Between Spain and Latin America:

a) Promote effective channels of collaboration between REDUC and Spanish universities, with the participation of the "Quinto Centenario" Society, in order to ensure the provision of scholarships directly related to training in the management of education information. This program should also have the participation of the Ministry of Education and Science, and its network TESEO.

b) That the "Quinto Centenario" Society support a scholarship program so that Spanish university students can study in Latin American universities, and that Spanish universities promote the extension of that program among European students who wish to study in Latin America.

c) That European universities and centres interested in Latin American education acquire the various products that REDUC offers, and that they establish exchange agreements in order to obtain documents on education in Latin America produced in Europe.

d) Given that until now REDUC has emphasized its relationship with non-governmental organizations, it was recommended that it now seek to develop a cooperative relationship with the EEC via the active participation of Spanish organizations.

e) That in Spain there exist two REDUC-associated centres, one related to non-governmental organizations and the other to official organizations.

f) That the REDUC Coordinating Centre, with the Spanish organizations, define the working agreements and programs that will be necessary for strengthening Ibero-American cooperation. In this process it was recommended that OEI play a catalytic role in facilitating Ibero-American cooperation.

g) That the "Quinto Centenario" Society and REDUC facilitate the preparation of compendiums or readers on Ibero-American education, directed at Spanish and Latin American students.

h) That REDUC provide systematized information on primary education and popular education in Latin America.

i) That bibliographies be elaborated on research related to Latin American education, in the following

way: 1) the University of Extremadura will highlight works in Spanish and Portuguese; 2) the Catholic University of Louvain will do the same with documents in French; 3) the University of Heidelberg could highlight documents in German; and 4) the Universities of the United Kingdom, where appropriate, will do the same with respect to documents in English.

Notes from chapter VI:

51) See Corvalán, O.; Antecendentes de la Problemática Norte-Sur y Sur-Norte en Educación. ("Background to the North-South and South-North Problem-Areas in Education") Paper presented at the REDUC meeting in Bogota in September, 1987.

52) See also point 6.3.2.

53) On this final point, a discussion was proposed among specialists on the feasibility of this idea. In any case, the group coordinator emphasized the need to facilitate the expression of native cultures.

Appendix N° 1

CONVENING OF MEETING

IBERO-AMERICAN CONFERENCE ON INFORMATION AND EDUCATION: THE EXPERIENCE OF REDUC AND NEW FORMS OF COOPERATION BETWEEN EUROPE AND LATIN AMERICA

1. BACKGROUND

1.1. Institutional Background:

The development of REDUC as a data base and as an information and documentation network in the field of education research, and the interest demonstrated by the Ministry of Education and Culture of Spain in establishing cooperation links between REDUC and countries of the European community on the occasion of celebrating the 500th Anniversary of the Discovery of America, constitute the basic background to this project.

Education research in Latin America has experienced an important quantitative and qualitative development with the impetus of the social sciences and the need for information emerging out of planning and other educational development activities in the last thirty years. There is no longer any reason for thinking about Latin American Education without basing it upon knowledge produced in the

region itself. Given the scarce dissemination that the results of these research works and documents referring to educational innovation and reforms had, the Centre for the Investigation and Development of Education (CIDE) in Santiago, Chile began to publish analytical summaries of these materials in 1972. Beginning in 1977, other centres with similar concerns started to join in this effort. Today, 27 education research centres constitute the Latin America Network of Information and Documentation in Education (REDUC), in this way encompassing all the countries of the region with the current exception of Cuba and El Salvador. In this way, more than 16,000 documents have been processed, bringing the average annual production of analytical summaries to 2,000 over each of the last three years throughout the Network as a whole.

Moreover, from the analytical summaries the REDUC-Associated Centres publish bibliographies, press analyses, states of the art on the research situation in specific fields, and other products directed at various groups interested in utilizing the knowledge that is currently emerging on education in Latin America. As well, in this way they promote national meetings of researchers, and other activities that the Centres regard as appropriate for the best contact between producers and users of the research.

CIDE, as the Coordinating Centre of the Network, establishes the technical norms and publishes annual Indices of the Analytical Summaries produced by all of the Associated Centres, which allows for searches throughout this bank of documentary data. Computerization, which has begun to be introduced in the Network, will allow for making the process more agile and for a broader dissemination of the contents.

Currently each Centre publishes its summaries in magazine format, which are exchanged among Associated Centres and distributed within each country. This currently allows anyone, in any country in Latin America, to obtain the ensemble of products of the Network in each one of the Associated Centres. It is a first step. Others are being taken that should allow access to this documentary bank in a much broader way, within as well as outside the Region. The initiative has the backing of UNESCO, UNICEF, the OAS, OEI and the "Convenio Andrés Bello", with the economic support of various bilateral aid agencies.

According to a decision made at the Fourth Meeting of Directors of REDUC-Associated Centres in Brasilia in June, 1987, we are taking legal steps to constitute REDUC as an International Non-Governmental Organization. Currently some centres form parts of Ministries of Education, others of public and private universities, or they are independent institutions.

As for REDUC, it is interested in the entry into its documentary bank, of the research produced in Northern countries on Latin American education; and the Associated Centres are interested in offering to their users the data base of those countries. REDUC is also interested in making its own products

accessible to those interested in educational development in Latin America but who reside/work outside the region. These aspirations have begun to be converted into reality with the U.S. and Canada (the University of New Mexico and the Ontario Institute for Studies in Education). The moment has now arrived for establisning a similar type of relationship with the European Community.

The opportunity is being offered by the "Quinto Centenario" and the space which Spain occupies within the European Community in terms of their relationship with Ibero-America. That is how it is being perceived by CIDE, the Ibero-American Office of Education, and the District of Extremadura, which have offered to sponsor the carrying out of this project as a first phase within a longer-term process of cooperation.

1990 saw the carrying out of the Fifth Meeting of Directors of REDUC-Associated Centres.

As well, UNESCO,UNICEF,UNDP, and the World Bank recently convened the International Conference "Education for Everyone" (Bangkok,1990). REDUC together with groups in Southeast Asia (SEARRAG), East Africa (ERNESA) and West Africa is preparing contributions based on knowledge around the particular theme generated in their respective regions. These groups are also building data bases and networks to disseminate the results of research in education. They form the Research Review and Advisory Group (RRAG), together with a group of researchers from Northern countries (NORRAG). We hope to have the participation of one representative from each Network in our Conference.

One must take advantage of the opportunities that are being offered for securing collaboration among these initiatives. On this will depend, in the long-run, the new educational development effort at an international level that is expected to be launched in Bangkok.

1.2. The Context: Crisis and Education in Latin America:

1.2.1. Dimensions of the Crisis:

The commemoration of 500 years since the Discovery of America finds Latin America submerged in the greatest crisis of its contemporary history. In effect, from an importer of capital in previous decades, the region is now exporting, and beginning in 1982, its countries have been obliged to follow the dictates of the IMF in the area of structural adjustments, creating levels of unemployment never before observed, along with inflation and recession in some countries. As a result of the economic crisis, the development model that was founded upon protected industry directed at an internal market -practised for more than four decades in the region- appears to have reached a definitive end. In social terms, one observes

processes of exclusion or marginalization of social classes, strata or groups that -in one way or another- had managed to incorporate themselves into "modern times", or were on the way to doing so. Such processes-apart from constituting a theoretical and practical reverse of the policies of social integration that accompanied the industrialization development model- are the objective basis for situations of extreme social disintegration, evidenced by the drug-trafficking, corruption and political violence that today form part of the daily life of almost all of the countries of the region.

Nevertheless, in spite of the fact that the most visible causes and effects of the crisis appear in the economic, politic and social areas, this has another dimension not always considered: the cultural dimension, that manifests itself in the difficulty of Latin American intellectuals to ponder and disseminate interpretive frameworks that open up new possibilities for confronting the crisis and moving towards the future. If, at the 500-year mark in the formation of Latin America, we find ourselves submerged in a profound crisis whose only alternatives appear to be "structural adjustments", perhaps the moment has arrived to discover new alternatives, or to re-think existing ones as a challenge that makes possible a move forward, seeking out and opening up meanings and significances of our reality as Latin Americans in crisis. This is especially valid for the educational field, where changes continue being made in the midst of the crisis as if this didn't exist; or even more, as if commencing with education it were possible to shape all of society in one sense or another. However, behind those changes, we can detect deficits in or the need for thought and research.

1.2.2. The Crisis and Education:

In education, the crisis has been felt in different ways. The first is the reduction in public spending in education as part of global adjustment programs. The reduction immediately affects some key aspects, such as teachers' salaries; and it affects other, less visible aspects that are also of strategic importance for the future of education on our continent: education research. With respect to that, some works in progress that are being carried out by the REDUC Coordinating Centre appear to indicate that: a) the number of the research works carried out in the region has decreased; b) the nature of the research and experiences is changing, with a marked decrease in experimental or pilot projects or research, and an increase in the proportion of small research works, case studies and essays. Although these works have not yet been completed, it is possible to tentatively state that the period of major educational plans and reforms has come to an end.

In spite of that, broad transformations with definitive effects on our educational systems and even our society are being carried out in the region. For example, one theme that affects various countries is that of educational decentralization. In Argentina, Brazil, Colombia, Chile, Mexico -in various countries whose governments have very distinct political orientations- it is an unavoidable theme, with a clear policy of

decentralization and where decentralizing measures are being implemented.

The educational plans and reforms of the 1960's and 1970's centred their efforts around the teaching-learning process, curriculum, plans and programs, and teaching methods. There were also notable efforts at increasing access of the general population to educational services, especially the poorest sectors; and only exceptionally was there a focus on the administrative and legal-political aspects of the system.

The questions that guided those processes could be summarized into two:how to teach more people, and how to teach better. In this way, these plans and reforms represented the best efforts of the Latin America states to achieve the hundred-year-old aspiration of universal education; of a break with the "regurgitive" educational tradition inherited from the 19th Century; and at the same time, of a harmony with the development planning processes initiated at the end of the 1950's.

Following the Latin American tradition in the educational area, planning and reform processes were public, state efforts. Along with them, and as a need to guide the changes, systems of educational statistics were created in various countries, as well as research and planning units, post-graduate programs in education, etc. In short, the process was carried out within the educational field, with professionals that emerged from the classroom or those from other fields who joined the effort (particularly engineers, economists, administrators and social scientists), and who undertook as their own the existing concerns in the field of education.

When the educational reform cycle had no sooner concluded, there appeared the spectre of a world economic crisis, and with it a distinct form of social diagnosis: in neo-liberal thinking, the major obstacle to the production of goods and services -among them education- is state intervention, which inhibits the creative energies of society.

In this way, in the educational field, there emerged events and interpretations that profoundly affected and are affecting the suppositions upon which earlier plans and reforms had been built:

a) New questions that the reform processes and those aimed at universalization themselves raised, and that can be summarized in the relationship of the school to the community, and the social and individual relevance of education;

b) The anti-state interpretations of the crisis, and more, of development in general; and

c) The crisis itself, with its effects of spending decreases, unemployment, etc. Within that context, some of the successes at universalization of education constituted later problems, in particular the explosive

increase in school enrolment at the highschool and university levels.

Within that framework, for some decentralization constitutes a response to the problems related to education, given that it more effectively ties it to the community. However, for others, it constitutes a possibility for diminishing the weight of the State in education. And ultimately, due to the consequence of a decrease in the negotiating power of the teachers, it springs to mind that decentralization is also a strategy for lowering costs under crisis conditions.

We can legitimately ask ourselves if the new problems and situations that education and educators are confronting in Latin America form part of the agenda of education researchers, of academics in the school, education faculties and universities, of teachers and their organizations. The effects of the crisis and the decentralization processes upon the quality and quantity of education is an obvious question -the situation of young people in highschool and university, the effects of the decrease in teachers' salaries, the regionalization of plans and programs, organization of the school system or structure, etc. etc. The research agenda is immense and we are not referring to just any research but that which is crucial to understanding and altering the current situation.

Yet, at the same time, resources are scarce, even more so than during the 1960's and 1970's. Within that context, REDUC's task is even more valuable and important inasmuch as the availability of information allows for a savings in the cost of research, especially during the stages of methodological design and formulation of the question. Meetings of researchers also acquire new dimensions as they can constitute a space for defining priorities and agendas. If the contrary occurs, one runs the risk that decisions in the area of education result from purely economic criteria, with the gravest of consequences for the future of our societies.

The carrying out of this Conference constitutes a privileged space for examining REDUC's experience in the development of thought and solutions to the Latin American educational problem, via the analysis and dissemination of research results; and for comparing it to the European experience in this area.

2. AIMS AND OBJECTIVES

The Ibero-American Conference that we propose ultimately attempts to tighten collaboration among REDUC, its users, the researchers responsible for information networks, and European development aid agencies that are interested in educational development in Latin America.

In more specific terms, the Conference seeks:

1. to offer to participants a panorama of education research in Ibero-America, and of the various activities that REDUC develops for disseminating it and linking it to decision-making;

2. to offer, in turn, a panorama of European interests and research works on Latin America, and of European activities in information and documentation in this field;

3. to jointly discuss the employment of magnetic means for disseminating and utilizing the information, and in general the problem of access to information on education;

4. to propose forms of collaboration between REDUC and those in Europe who are interested in research, information and support of educational development in Latin America; and

5. to disseminate, in both Europe and Ibero-America, the contributions and conclusions of this Conference.

Beyond the meeting itself and the immediate consequences that could follow it, there will be the legitimization of knowledge produced in Latin America and other regions of the Third World, and the valuing of its dissemination and use. Research and use, committed to action, constitute the way to confront the current juncture in a viable and unique fashion.

2.1. Types of Participants

There will be five types of participants:

1. education researchers from Latin America;
2. education researchers from Spain and other European countries;
3. representatives of REDUC-Associated Centres;
4. representatives of educational information and documentation networks in Europe; and,
5. representatives of European financing agencies interested in the field of education.

3. DATES AND LOCATIONS

Prior to the Conference, there will be a meeting of Directors of REDUC-Associated Centres, October 2-3-4 in Badajoz.

The Ibero-American Conference will take place October 5-6-7 in Badajoz.

4. PROGRAM

In order to achieve the previously-stated objectives, it seems to us to be necessary to develop a program that, on the one hand allows us to present and discuss that "new continent" that Latin American education research represents, and REDUC's experience in producing and disseminating it. And, in the other hand, that it offer the opportunity to explore European interests in Latin American education, and its achievements in the development and use of the data bases linked to education research.

From this discussion and the informal exchange among participants, there should emerge an agenda for collaboration in this area, within the context of the current crisis.

Wednesday, October 4:

7:30 p. m.Arrival of European participants
INAUGURATION: Ibero-American Conference Reception with local authorities.

Thursday, October 5:

8:30 - 10:30 a.m.
Introduction to the Conference

11:00 - 1:00 p.m.
First Session:
"Trends and Characteristics of Education Research in Latin America"
Juan Eduardo García-Huidobro
(CIDE-Chile)

3:00 - 4:00 p.m
. Second Session:
"Strategies for Improving Access to and Permanence in Primary Education"
Luis Narro
(CEE-Mexico)

4:00 - 5:00 p.m.
Third Session:
"Learning Styles and Marginal Groups: Review of Research"
Terezinha Nunes Carraher
(University of Recife)

Friday, October 6:

8:30 - 10:30 a.m.
Fourth Session:
"Research on Education in Latin America Carried Out in Europe"
Prof. Ulrich Erhardt
(University of Heidelberg)
Commentator : Carmen Labrador

11:00 - 1:00 p.m.
Fifth Session:
"The Experience of REDUC"
Luis Brahm
Commentator: Bernardo Toro

3:00 - 4:00 p.m.
Sixth Session:

"The Experience of UNESCO and Spain in Data Base Formatting"
J.M. Berenger
J. Pimenta
Gianpaolo del Biggio

5:00 - 9:00 p.m.
Seventh Session:
Continuation of Session VI
Activities to be Established

Saturday, October 7:

8:30 - 10:00 a.m.
Eighth Session:
"Forms of Ibero-American/European Collaboration"

11:00 - 1:00 p.m.
Ninth Session:
"Conference on Education For Everyone" - Bangkok
Nigel Fischer
Commentators: Arfa Azis, Donatus Komba and a representative from REDUC

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- María Eugenia Dengo, Technical Consultant (Costa Rica)
- Ubiratán D'Ambrosio, Technical Consultant (Brazil)
- Juan Eduardo García-Huidobro, Speaker (CIDE-Chile)

5.3. REDUC Coordinating Team

- Luis Brahm
- Patricio Cariola
- Oscar Corvalán
- Horacio Walker

5.4. Special Guests

- Teresa Beemans, CIDA (Canada)
- Kenneth King, University of Edinburgh, General Coordinator of RRAG (Edinburgh)
- Ulrich Erhardt (University of Heidelberg)
- Terezinha Nunes Carraher, Speaker, University of Pernambuco (Brazil)
- Martha Stone, IDRC, Canada
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- Joe Carney, AID (Washington, D.C.)
- Nigel Fischer (New York)
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- Bernardo Toro (Colombia)
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Appendix Nº 2

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